

Combined Air Emissions Reporting System (CAERS) User's Guide

Version 2.0

Last updated: 2/25/2021

Table of Contents

1.1	Introduction to CAERS.....	6
1.2	Highlights of CAERS Features.....	6
1.3	Software Requirements for CAERS.....	7
2	Initial Pre-Reporting Steps.....	7
2.1	Determine Your Role as Preparer or Certifier.....	7
2.2	Option for Reporting TRI-bound Air Toxics Data.....	7
2.3	Timing of Your NEI and TRI Submissions.....	8
3	Registration.....	9
3.1	Pre-registration for Georgia Department of Natural Resources Registrants.....	9
3.1.1	Georgia Opt-in Process.....	9
3.1.2	Additional Considerations for GADNR Registration.....	14
3.2	Registration in CDX.....	14
3.3	Add CAERS to your CDX Account.....	16
3.4	Gain Access to CAERS and your Facility.....	25
4	Reporting Emissions and Facility Information via the User Interface.....	27
4.1	Navigating the User Interface.....	27
4.1.1	General Description of User Interface Features.....	27
4.1.2	Emissions Reports Page.....	28
4.1.3	Report Summary Page.....	29
4.1.4	Including an Attachment in Your Report.....	31
4.2	Facility Inventory.....	32
4.2.1	Facility Information.....	32
4.2.2	Emission Units Page.....	36
4.2.3	Release Points Page.....	39
4.2.4	Control Devices Page.....	43
4.2.5	Control Paths Page.....	47
4.3	Emissions inventory.....	52
4.3.1	Units.....	52
4.3.2	Processes.....	52
4.3.2.1	Associating a Process to a Release Point.....	57
4.3.2.2	Entering and Calculating Emissions.....	57
5	Reporting Emissions and Facility Information Using Bulk Upload.....	60
5.1	The Bulk Upload Excel Template.....	60
5.2	Bulk Upload Steps.....	64

5.3	JSON	65
6	Reporting Emissions Using Bulk Entry.....	65
7	Performing Quality Checks.....	66
8	Certifying and Submitting to your State, Local, or Tribal Authority	69
9	Submission Approval.....	70
10	Using Data Reported in CAERS for a TRI-MEweb submission.....	70
11	Where to Go for Help.....	73
11.1	Help with the CAERS application itself.....	73
11.2	Help with programmatic questions:	74
Appendix A	Understanding Controls	A-1
Appendix B	Additional Resources	B-1

List of Figures

Figure 3-1	Emissions Inventory Process Screen.....	10
Figure 3-2	Edit Facility Details in GECO Screen 1	11
Figure 3-3	Edit Facility Details in GECO Screen 2	11
Figure 3-4	Facility Operational Status.....	12
Figure 3-5	Facility Emissions Thresholds Screen.....	13
Figure 3-6	Preparer and Certifier Form.....	14
Figure 3-7	CDX Login Screen	15
Figure 3-8	CDX Terms and Conditions.....	16
Figure 3-9	CDX Program Service Page.....	16
Figure 3-10	Role Selection Screen.....	17
Figure 3-11	User Information Data Entry.....	18
Figure 3-12	Selection of Organization.....	18
Figure 3-13	Organization Information Data Entry	19
Figure 3-14	Confirmation Code Entry	20
Figure 3-15	CDX Lexis Nexis Identity Verification	20
Figure 3-16	CDX Lexis Nexis Identity Verification	21
Figure 3-17	Verification Questions	22
Figure 3-18	CDX Electronic Signature Agreement	23
Figure 3-19	eSignature Screen	23
Figure 3-20	MyCDX Page.....	24
Figure 3-21	"My Facilities" Page in CAERS.....	25
Figure 3-22	Facility Search in CAERS.....	25
Figure 3-23	Request Access to Selected Facility	26
Figure 3-24	"My Facilities" Page Listing Facilities	26
Figure 4-1	Begin Emissions Report.....	29
Figure 4-2	Emissions Report Page.....	29
Figure 4-3	Facility Report Summary Page	30
Figure 4-4	Including an Attachment.....	31

Figure 4-5. Facility Information Page	32
Figure 4-6. Editing Facility Information.....	33
Figure 4-7. Edit Facility NAICS codes.....	34
Figure 4-8. Find and Select NAICS Code.....	35
Figure 4-9. Enter Facility Contact Information.....	35
Figure 4-10. Emissions Units Page	36
Figure 4-11. Adding a New Unit	37
Figure 4-12. Example of a Page for a Specific Unit	38
Figure 4-13. Editing a Unit.....	38
Figure 4-14. Release Points Page	39
Figure 4-15. Adding a New Release Point	41
Figure 4-16. Example of a Page for a Release Point.....	42
Figure 4-17. Editing a Release Point.....	42
Figure 4-18. Control Devices Page	43
Figure 4-19. Adding a New Control.....	44
Figure 4-20. Example of a Page for a Control Device.....	45
Figure 4-21. Editing a Control Device.....	45
Figure 4-22. Associating a Pollutant and Control Efficiency to a Control	46
Figure 4-23. Control Paths Page.....	48
Figure 4-24. Adding a New Path.....	49
Figure 4-25. Example of a Page for a Control Path	49
Figure 4-26. Editing a Path	50
Figure 4-27. Adding a Path Assignment	50
Figure 4-28. Example of a Facility with Complex Controls.....	51
Figure 4-29. Adding a New Process.....	53
Figure 4-30. SCC Search	54
Figure 4-31. Example of a Page for a Process	55
Figure 4-32. Editing a Process	56
Figure 4-33. Release Point Apportionment.....	57
Figure 4-34. Adding a New Pollutant	58
Figure 4-35. Selecting a Calculation Method	59
Figure 4-36. Using EPA Emission Factor Alternative	60
Figure 5-1. Example of Bulk Upload Template Worksheet	64
Figure 6-1. Bulk Entry Process Information Tab.....	65
Figure 6-2. Bulk Entry Emissions Information Tab	66
Figure 7-1. Quality Review Page	67
Figure 7-2. Correcting an Error	68
Figure 7-3. Completing Quality Checks	69
Figure 8-1. Submission Certification	70
Figure 10-1. Example of Section 5 Form R Screen in TRI-MEweb.....	71
Figure 10-2. Example of "NEI Data Available" Screen.....	72
Figure 10-3. Example NEI Data Availability Pop-Up Window.....	72
Figure 10-4. Example Pop-Up Window for Comment.....	73
Figure A. 1. Example of a Facility with No Controls	A-2
Figure A. 2. Example of a Facility with a Single Control	A-3
Figure A. 3. Example of a Facility with Controls in Series	A-4

Figure A. 4. Path Assignments for a Facility with Controls in Series	A-5
Figure A. 5. Example of Complex Controls	A-6
Figure A. 6. Path Assignment for a Facility with a Complex Controls	A-6
Figure A. 7. Planer Mill Cyclofilter Path Assignment.....	A-8
Figure A. 8. Example for Controls Working Alternately	A-9
Figure A. 9. Path Assignment for Controls Working Alternately.....	A-10
Figure B. 1. Flow of Uncontrolled Emissions.....	B-7

List of Tables

Table 4-1. Example of Data Entry for Controls in Sequence for Path 1	51
Table 4-2. Example of Data Entry for an Assignment including a Control and a Path Running in Parallel for Path 2.....	52
Table A. 1. Example of Associations for a Facility with No Controls	A-2
Table A. 2. Example of Associations with No Controls and Three Release Point Apportionments	A-3
Table A. 3. Example Path for a Facility with a Single Control.....	A-3
Table A. 4. Example Associations for a Facility with a Single Control	A-4
Table A. 7. Example Paths for a Facility with Controls in Series	A-5
Table A. 8. Example Associations for a Facility with Controls in Series	A-5
Table A. 11. Example Paths for a Facility with Complex Controls.....	A-7
Table A. 12. Example Associations for a Facility with Complex Controls.....	A-8
Table A. 14. Path Data for Planer Mill Cyclofilter.....	A-8
Table A. 15. Release Point Apportionment Data for Planer Mill Cyclofilter	A-9
Table A. 18. Path Data for Controls Working Alternately	A-10
Table A. 19. Release Point Apportionment for Controls Working Alternately	A-10
Table B. 1. Default Heat Values for Fuels.....	B-1
Table B. 2. List of Simple Unit of Measure Conversions in CAERS	B-4

1.1 Introduction to CAERS

The Combined Air Emissions Reporting System (CAERS) is an application that allows industry from subscribed State, Local, or Tribal authorities (or SLTs) to report their air emissions, so that you can:

- Meet specific SLT air emissions reporting requirements given individual SLT regulations.
- Report annual or triennial emissions to meet the requirements of the U.S. EPA's Air Emissions Reporting Rule (AERR), as per the Code of Federal Regulations (or CFR) 40, Part 51.
- And, optionally, get a head start on reporting your facility's toxics air emissions to the U.S. EPA's Toxics Release Inventory (TRI), as per 40 CFR Part 372.

You should check with your SLT to determine if you meet the criteria for annual reporting.

1.2 Highlights of CAERS Features

CAERS contains the following features that the user should be aware of. Time spent understanding these basic features will help the user navigate CAERS and ensure a smooth reporting experience.

1. Previously reported data as a starting point for a current inventory year report.
2. Three options for data entry:
 - a. **User interface** – for users with few changes to a previous year report, and with different kinds of changes
 - b. **Bulk entry** – for users with a few changes to their annual throughput and emissions, but with few to no changes to their facility inventory.
 - c. **Bulk upload** – for users with a large number of changes, and/or with a variety of changes from a previous year report, this includes new and/or large facilities with no previous reporting history who will want to start a brand new report.
 - i. **Via excel template** – for users who would like to work with excel
 - ii. **Via JSON upload** (forthcoming) – for users who would like to send data directly from their custom systems. This feature is still under construction. Your input and feedback are particularly helpful at this stage.
3. Ability to include attachments. Your SLT may require you to provide supplemental information to your estimates such as detailed calculations in a spreadsheet or word document.
4. Bulk download. You will be able to download your previous year report in the excel template you will need for bulk upload. This will allow you to make the relevant changes directly to the template.
5. Ability to download summary reports. You can obtain a summary of your submission in an excel file (different from the bulk download described above).
6. Use of toxics air pollutants and hazardous air pollutants (HAPs) reported to CAERS for Toxics Release Inventory (TRI) reporting. When using the calculation features and/or uploading calculations for toxics emissions in CAERS, CAERS will aggregate toxics emissions for the facility, and leave that data ready for TRI-MEweb to pick up so it can be used for that facility's air emissions reporting.
7. A "Report History" page that tracks major activities from reporters and certifiers such as attachments, certification, and submission of the report.

1.3 Software Requirements for CAERS

To use the CAER system, you will need:

- Internet browser and connectivity: This should be a recent version of any internet browser such as Chrome, Explorer, Edge, or Firefox. Your internet connectivity will determine how fast data can be uploaded, as will the amount of data you are uploading at one time.
- Microsoft Excel: Bulk uploads will be in “XLS” or “XLSX” format.

2 Initial Pre-Reporting Steps

2.1 Determine Your Role as Preparer or Certifier

Your first step will be to determine if you are a preparer or certifier as follows:

You are a **Preparer** if you are authorized to prepare an emissions report for National Emissions Inventory (NEI) and/or Toxics Release Inventory (TRI) data for a given facility. You may be a consultant, or a staff person for the company owning the facility, for example. Note that:

- There may be more than one Preparer for a facility and that facility is associated with each Preparer’s account.
- There may be a single Preparer for more than one facility, and all those facilities are associated with that Preparer’s account.
- A Preparer cannot sign and submit the report like a Certifier can.

You are a **Certifier** if you are authorized to sign the emissions report on behalf of the facility to meet your legal obligation for reporting to your State, Local, or Tribal authority (SLT). If your report will also contain data going to TRI via TRI-MEweb, you will certify your TRI report within the TRI-MEweb application, so you will not be certifying your TRI data in CAERS at this time. However, certification of your report is needed to indicate to the system your report is complete, so that TRI data can be carried forward to TRI-MEweb from CAERS. So long as a report is still in progress, CAERS will not make the data available for TRI-MEweb pick up. Note that:

- The Certifier can do everything a Preparer does in the System. Therefore, a Certifier who is also the Preparer for a facility only needs to register as a Certifier for that facility and does not require an additional Preparer account.
- There may be only *one* Certifier for a facility. Only one individual can sign the report for that facility.
- There may be a single Certifier for more than one facility (multiple facilities associated with the certifier account). However, your SLT may have additional limitations to those the system allows, so you should check with your SLT for specific instructions.

2.2 Option for Reporting TRI-bound Air Toxics Data

CAERS has an optional feature that allows you to get a jump start on the air toxics emissions reporting for your facility. You can enter air toxics/HAP data in CAERS in conjunction with your NEI reporting. When you are finished, CAERS will then add toxics data up to your facility total and leave that data available for TRI-MEweb to pick up and prepopulate your air toxics report.

Regulations do not require your report to be reviewed by your SLT for your toxics data to be made available for TRI reporting. Additionally, your SLT may not require you to report your facility’s air

toxics/HAP emissions through CAERS. However, we are encouraging facilities to submit HAPS data at the process level in CAERS for the following reasons:

- You'll be able to enter this data and take advantage of the CAERS aggregating air toxics data to the facility total.
- Having your SLT review your criteria pollutant data *before* your data gets to TRI-MEweb gives you the opportunity to correct any related toxics data. For example, assume your SLT finds an error with throughput for a unit/process affecting your facility's CO and NOX emissions, that is also affecting your VOC calculations. As you correct that throughput, all affected emissions are corrected as well.
- If no HAPS are reported for the facility, then EPA estimates these emissions from your criteria emissions data via HAP augmentation calculations. These estimates may not be as accurate as your own data. By submitting your own HAPS emissions at process level in CAERS, you are in charge of your data.

2.3 Timing of Your NEI and TRI Submissions

CAERS will add up all toxics/HAP emissions entered and calculated at the unit/process level, and make those totals available to you in TRI-MEweb (as explained in Section 8). By using CAERS the goal is for reporters to save time in doing calculations separately for each program when common input data (e.g. throughput) can be used for TRI reporting. Therefore, a reporter should create the CAERS emissions report leaving time for the submission to take place before the SLT submission deadline, as well as the TRI deadline of July 1st. TRI data submissions do not require review by your SLT authority and are picked up by TRI-MEweb by the submission deadline. A submission that, upon SLT review, requires edits after that date, will be updated accordingly for submission to NEI. However, any toxics data affected by such edits will be updated in TRI-MEweb at a later date. Furthermore, you will also want to account for the your SLT's submission deadline. For example, GADNR EI deadline is June 30th of each year.

Finally, it is important to leave time in case issues come up that require intervention by the help desk, SLT, or EPA staff to resolve. Were we to find any glitches in the software, those will take time to resolve as well. Therefore, we recommend that you:

- Register as Preparer or Certifier as soon as you know your role in the process.
 - If you are already registered as Preparer/Certifier for a facility from last year's submission, you do not need to re-register, but you should follow any additional steps your SLT may require.
 - If staff changes:
 - For GADNR preparers and certifiers: go to GECO to register first, then proceed to CDX to register only after you have gone through the steps in GECO.
 - For other SLT preparers and certifiers, please notify your SLT immediately with the name, email address, mailing address and phone number of the new staff person. Then, new staff should register to CDX immediately to start and/or continue the report.
- Coordinate your NEI and TRI reporters so that you start your report no later than one month before the first program deadline you are facing.
- Complete your report no later than two weeks before your submission deadline, to allow for unforeseen circumstances that might delay your emissions report.

For example, given that GADNR’s submission deadline is June 30th, it is best for the facility to submit its emissions inventory through CAERS at least two weeks before that deadline to allow GADNR Reviewer’s advanced QA reviewing process.

3 Registration

3.1 Pre-registration for Georgia Department of Natural Resources Registrants

If you *do not* report to GADNR, you can proceed to the next step (Section 3.2) to start your registration process.

This section applies only to all Georgia Department of Natural Resources (GADNR) facility preparers and certifiers. GADNR preparers and certifiers must register first with GADNR in GECO, and follow the opt-in process, before they can start reporting in CAERS. If you report to GADNR, you must follow the steps outlined in this section *before* attempting to register in CDX and CAERS, even if you have already reported through CAERS in a previous year.

3.1.1 Georgia Opt-in Process

Your process will begin by logging into [Georgia Environmental Connections Online \(GECO\)](#). GECO will guide you through questions to determine your opt-in status to report to the Emissions Inventory (EI). All facilities must go through this process, whether you know you will opt in ahead of time or not. Once you have opted in, you will be redirected to the CAER system from GECO. This process is outlined in what follows.

After logging into GECO you will be taken to a screen to begin your emissions inventory process. Click on the “Begin EI Process” button (Figure 3-1). You will be redirected to a facility information page where your facility information can be reviewed and entered. Figure 3-2 and Figure 3-3 show the top and the bottom of the facility information page respectively.

Figure 3-1 Emissions Inventory Process Screen

The screenshot shows the 'Emissions Inventory System' page for Durango-Georgia Paper Company, St. Marys (039-00001). The page includes a navigation bar with 'Contact' and 'Account' links, and a sub-header with 'Switch facility' and 'Facility home' options. The main content area features a breadcrumb trail: 'EIS Home > EIS Facility Info > CAERS Users > Historical Data'. Below this, there is a paragraph explaining that facilities whose potential emissions equal or exceed thresholds must report actual emissions, and provides a link to 'Potential to Emit Guidelines'. A five-step process is outlined for the new Emissions Inventory process. A highlighted box titled '2020 Emissions Inventory Process' indicates the current status is 'Ready for the Emissions Inventory Process' and provides instructions to click a 'Begin EI Process' button.

Georgia Environmental Connections Online Contact Account

Current facility: Durango-Georgia Paper Company, St. Marys (039-00001) Switch facility Facility home

Emissions Inventory System

Durango-Georgia Paper Company, St. Marys
AIRS Number: 039-00001

[EIS Home](#) [EIS Facility Info](#) [CAERS Users](#) [Historical Data](#)

Facilities whose potential emissions equal or exceed the thresholds must report their actual emissions. For assistance with calculating PTE, please use the [Potential to Emit Guidelines](#). Since the 2019 Emissions Inventory, Georgia has used the *Combined Air Emissions Reporting System (CAERS)* developed by U.S. EPA.

The new Emissions Inventory process will be as follows:

1. Based on previously available information, the Georgia Air Protection Branch will enroll facilities that may need to participate in the Emissions Inventory. (If your facility has not been enrolled, but you believe it should be participating in the EI, please email emissions.inventory@dnr.ga.gov.)
2. Begin the EI process below. You will be asked to review basic facility information. You will then be asked about facility PTE emissions to determine if participation in the Emissions Inventory process is necessary.
3. If it is determined that the facility will participate in the Emissions Inventory process, you will be directed to provide preparer and certifier information. If it is determined that the facility will not participate in the Emissions Inventory process, the facility will be complete with the 2020 Emissions Inventory, and steps 4 and 5 can be ignored.
4. For facilities new to CDX/CAERS: Once you provide preparer and certifier information, you will be directed to EPA's CDX to provide the same information. For facilities who participated in the 2019 EI, skip this step unless a new preparer/certifier needs to be added.
5. A notification will be sent in March indicating when facilities can begin their 2020 Emissions Inventory in CAERS.

2020 Emissions Inventory Process

Current Status: **Ready for the Emissions Inventory Process**

EPD's Air Protection Branch has determined that this facility may need to participate in the 2020 Emissions Inventory. Click the button below to begin. You will first verify the facility and contact information and then answer questions about the facility emissions to determine if participation in the EI is necessary.

[Begin EI Process](#)

Figure 3-2. Edit Facility Details in GECO Screen 1


Georgia Environmental Connections Online

[Contact](#) [Account](#)

Current facility: Durango-Georgia Paper Company, St. Marys (039-00001)

[Switch facility](#) [Facility home](#)

Begin Emissions Inventory Process

Durango-Georgia Paper Company, St. Marys
AIRS Number: 039-00001

▶ Facility Information
▶ Facility Status
▶ CAERS Users
▶ Submit

Verify Facility Information

Verify the facility and contact information below. Make any corrections needed, then select the Continue button at the bottom of the page.

Name and Address

If the facility name or address are incorrect, please email emissions.inventory@dnr.ga.gov.

Name Durango-Georgia Paper Company
Site Address 4244 International Parkway Suite 120-test
 ATLANTA, GA 30354

Mailing Address

Mailing Address

City
State
Postal Code

Address Comment

Facility Description

Description

Figure 3-3. Edit Facility Details in GECO Screen 2

Emissions Inventory Contact

The Emissions Inventory contact will receive notices regarding annual Emissions Inventory submittals for the facility.

Honorific
First Name
Last Name
Title
Mailing Address

City
State
Postal Code
Phone Number
Mobile
Fax
Email

Contact Comment

Georgia Environmental Protection Division | Air Protection Branch

Figure 3-4. Facility Operational Status

The screenshot shows the 'Georgia Environmental Connections Online' interface. At the top, there is a dark blue header with the logo on the left and 'Contact Account' on the right. Below the header, a lighter blue bar displays 'Current facility: Durango-Georgia Paper Company, St. Marys (039-00001)' and 'Switch facility Facility home'. The main content area has a white background with a large blue heading 'Begin Emissions Inventory Process'. Below this, the facility name 'Durango-Georgia Paper Company, St. Marys' and AIRS Number '039-00001' are listed. A navigation bar contains four items: 'Facility Information' (with a checkmark), 'Facility Status' (with a play button and highlighted), 'CAERS Users', and 'Submit'. The 'Facility Operational Status' section asks 'Did the facility operate at any time during calendar year 2020?' with radio buttons for 'Yes' and 'No'. Below the question is a text input field labeled 'Comments (optional):' with a small cursor icon in the bottom right corner.

After clicking “Save & Continue” you will be directed to the “Facility Operational Status” page where you will be asked if your facility operated in 2020 (Figure 3-4).

If the facility operated during calendar year 2020, the user will be re-directed to the “Facility Emissions Threshold” screen to answer a question about the facility’s emissions (Figure 3-5). The user will click on the response to the threshold question and then click on “Submit”.

Figure 3-5. Facility Emissions Thresholds Screen

Facility Emissions Thresholds

Note that the thresholds below pertain to *potential emissions*, except for lead. The threshold for lead (Pb) is based on actual emissions.

Pollutant	Threshold (tpy)
VOC	100
SOx	100
NOx	100
CO	1000
PB	0.5
PM10	100
PM25	100
NH3	100

Is the facility below ALL of the thresholds listed?

Yes No

[Continue →](#)

If you have opted in, provide contact information for all the preparers and the certifier of your facility to GADNR (Figure 3-6). This information will be needed for GADNR staff to authorize you to report in CAERS.

Figure 3-6. Preparer and Certifier Form

Verify CAERS Users

Use of CAERS requires only one certifier and at least one preparer (multiple preparers are permitted). If a single person serves both roles, they must be added as both.

One certifier must be added before proceeding.

At least one preparer must be added before proceeding.

Add New User

CAERS Role Preparer Certifier Both

Honorific

First Name

Last Name

Title

Company

Mailing Address

City

State

Postal Code

Phone Number

Email

3.1.2 Additional Considerations for GADNR Registration

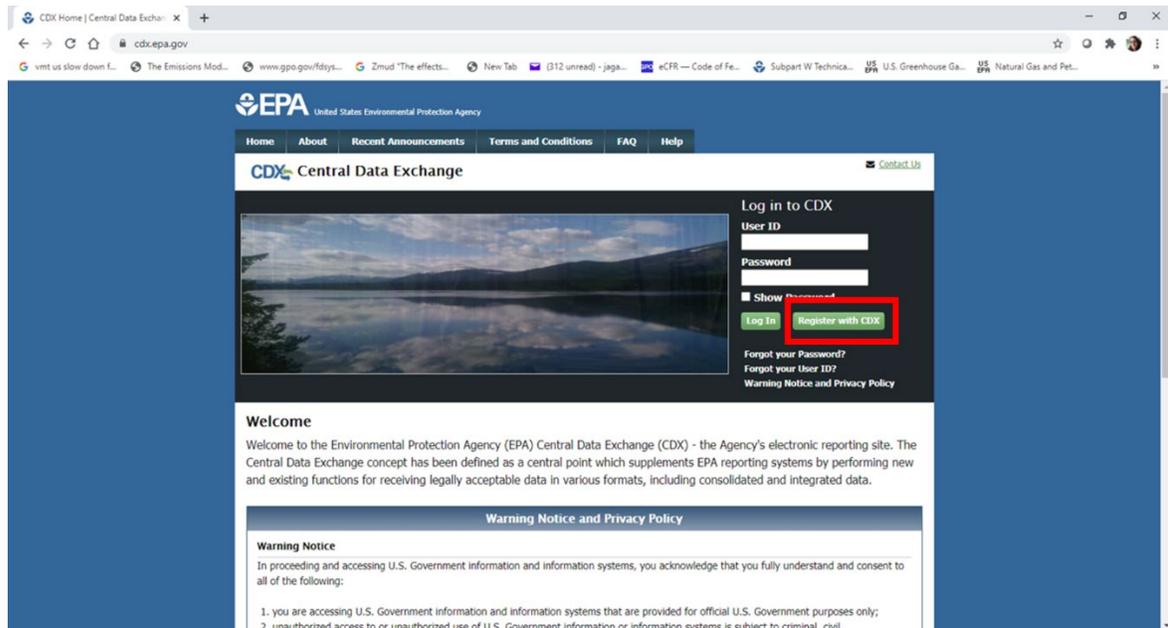
If you don't have a certifier yet: For 2020EI, GECO requires the facility to submit at least one preparer and only one certifier information before that facility can move forward to CAERS reporting. As soon as you know who your certifier will be, go to GECO EI to submit the certifier information, and then the certifier should go to CDX to register. At that point, GADNR staff will authorize the certifier. Only then can the certifier enter CAERS to certify the report.

If your preparer or certifier leaves the company during reporting: Please go to the GECO EI page *first*, per the instructions above, to update the preparer and/or certifier information. Then go to CDX to register the new person or add an existing preparer or certifier to that facility. GADNR staff will authorize the new person and allow them to enter CAERS. Keep in mind that if you don't go through GECO first and go to CDX directly, you will delay the process further.

3.2 Registration in CDX

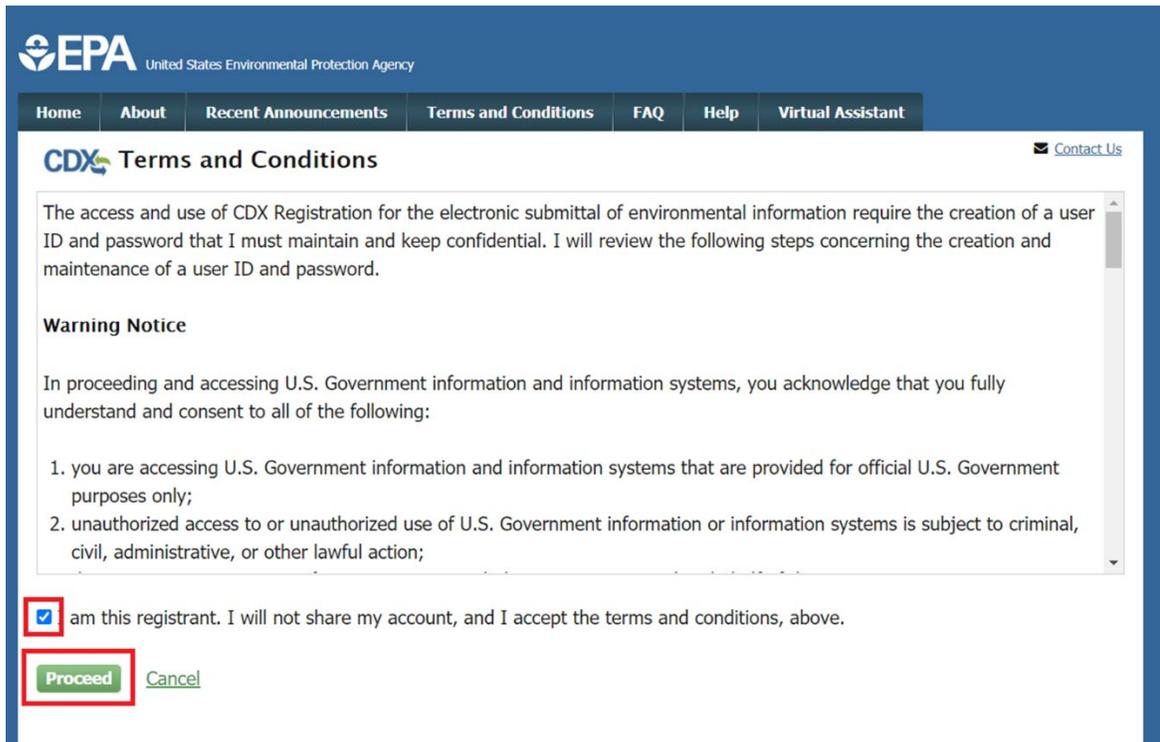
In order to enter CAERS, you will need to be registered in [EPA's Central Data Exchange \(CDX\)](#). If you already have a CDX account but have not registered to use CAERS, go to section 3.3. If you are new to CDX, click on the "Register with CDX" button (Figure 3-7).

Figure 3-7. CDX Login Screen



You will be directed to the Terms and Conditions screen for CDX registration (Figure 3-8). After reading these, check the box confirming that you are the registrant and click “Proceed” at the bottom left of your screen.

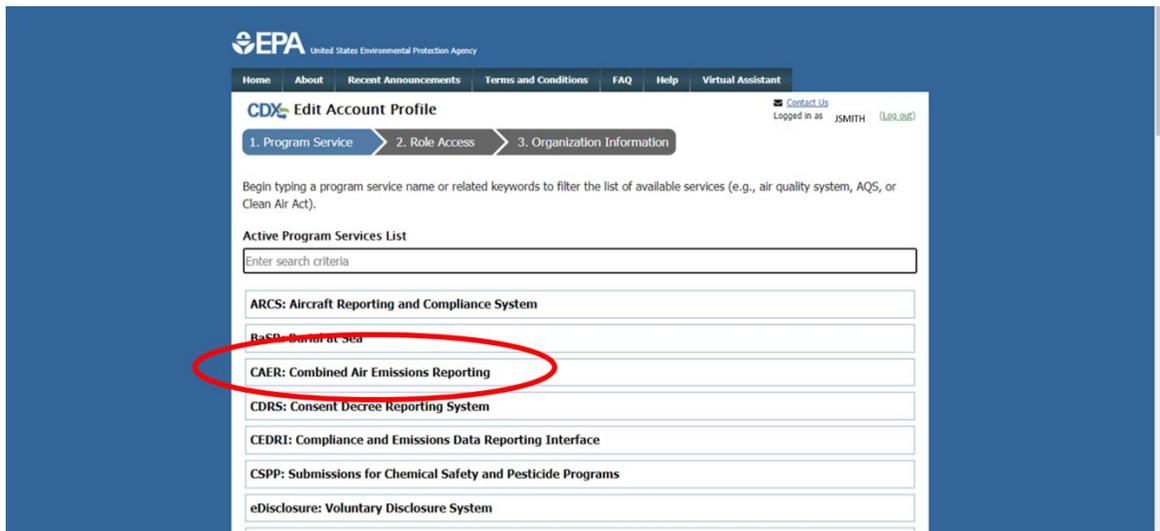
Figure 3-8. CDX Terms and Conditions



3.3 Add CAERS to your CDX Account

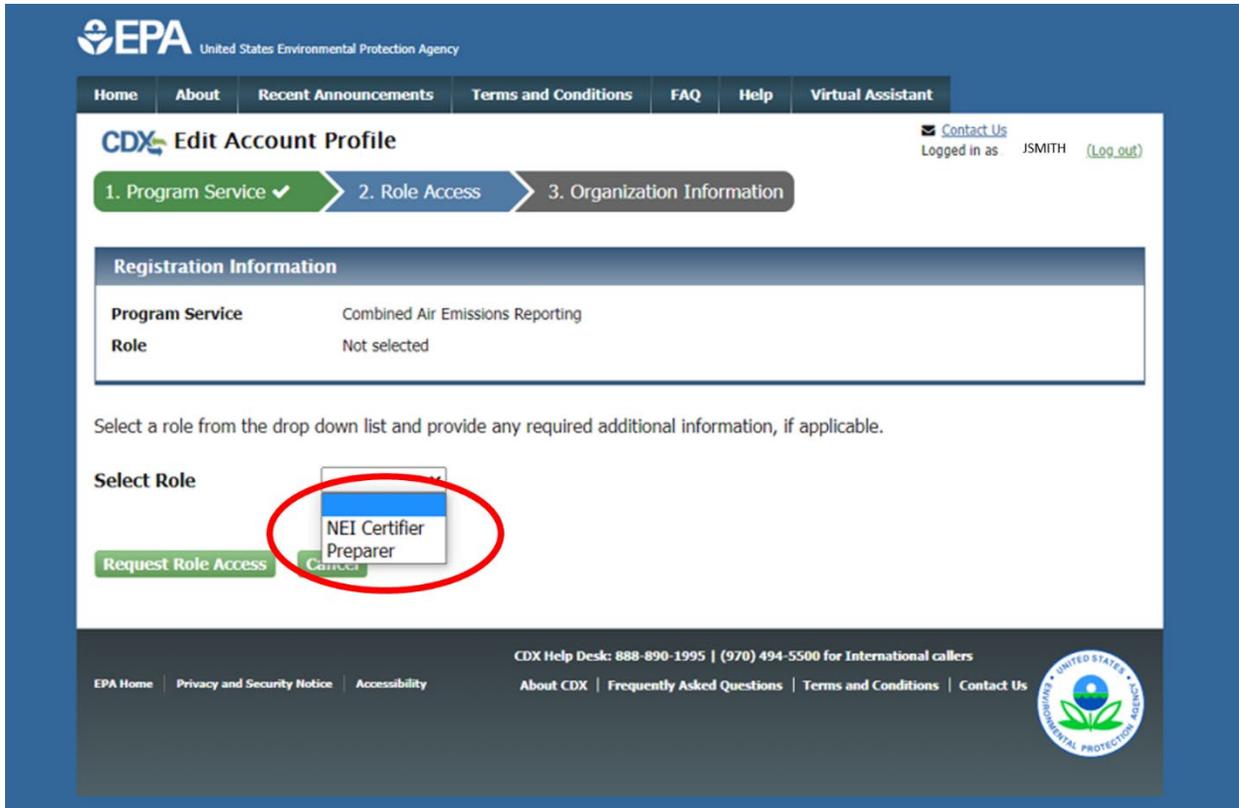
If you are both an authorized Certifier and Preparer, you do not need to go through this process twice, instead, just register as Certifier in CAERS once you are in. Once you have accepted terms and conditions, you will be taken to the Program Services page. You can search “CAER: Combined Air Emissions Reporting” from the list, or you can type it in the search list as shown in Figure 3-9.

Figure 3-9. CDX Program Service Page



You will be taken to the role access screen where you can choose your role as Preparer or Certifier, as shown in Figure 3-10. Remember that if you are both Preparer and Certifier, you only need to register as Certifier, you will not need two accounts if you have both roles.

Figure 3-10. Role Selection Screen



After selecting your role click on “Request Role Access”. This will take you through a few screens where you will enter information about yourself, and your organization. On the User and Organization screen (Figure 3-11) complete the User Information section, including your preferred User ID, password, and CDX security questions and answers. Make sure to follow all instructions that are provided, including the identity authentication questions asked. Make sure you remember the answers to those questions. The authentication questions are an additional step that is needed to ensure that only you, the authorized staff, can work on and submit the report, and to be in CROMERR compliance.

Figure 3-11. User Information Data Entry

Part 1: User Information

The program you are registering for requires additional proof of identity. Later in the registration process you will be given the option to use LexisNexis, an identity proofing service. LexisNexis will pull your first, middle and last name exactly as it is entered on this page.

User ID *

Title *

First Name *

Middle Initial

Last Name *

Suffix

Password *

Re-type Password *

Security Question 1 *

Security Answer 1 *

Security Question 2 *

Security Answer 2 *

Next, scroll down to the bottom of the screen and enter Organization Information in the relevant box. If multiple individuals work for a company, then they should all register for the same company in CDX. After you search for an organization click on an Organization ID link to select the respective organization (Figure 3-12).

Figure 3-12. Selection of Organization

Part 2: Organization Info

Enter organization or organization ID

Organization ID	Organization Name	Address	City	State	ZIP Code
21947	CGI TEST	12601 FAIRLAKES PKWY	FAIRFAX	VI	22033

Can't find your organization? [Use advanced search](#) or [request that we add your organization](#).

Figure 3-13. Organization Information Data Entry

Part 2: Organization Info

CGI TEST
12601 FAIRLAKES PKWY
FAIRFAX, VI, US
22033

Email *

Re-enter Email *

Phone Number *

Phone Number Ext

Fax Number

Wrong organization information? [Back to Search Results](#), [Use advanced search](#) or [request that we add your organization](#).

Once you've selected your organization, you will be required to enter an email address and phone number where you can be contacted. Click "Submit Request for Access" (Figure 3-13). This will generate an email that will be delivered to the email address you provided and forward you to the confirmation screen. This email will contain a code you will need to enter to complete your registration. Make sure to check all your email folders to ensure it was not lost in a spam folder.

Locate the email that was automatically sent to your address and enter the provided code. Once you have located the email and code, enter the code in the "Code" box. Then, click "Create Account" (Figure 3-14).

You will then be redirected to the 'Identity Verification' screen where you will provide your personal information to gain access to CDX. You MUST provide accurate personal information during CDX registration in order to pass LexisNexis Electronic Identity Verification (Figure 3-15).

Figure 3-14. Confirmation Code Entry

EPA United States Environmental Protection Agency

Home About Recent Announcements Terms and Conditions FAQ Help Virtual Assistant

CDX Confirmation [Contact Us](#)

1. Program Service ✓ 2. Role Access ✓ 3. User and Organization ✓ 4. Confirmation

A few more steps...

You will soon receive an email confirmation message at *Your email address* with a validation code. Enter the validation code below or follow the link provided in the email to activate your user account.

[Resend validation code](#)

User ID: JDOE.REGISTRATION2

Code:

[Create Account](#) [Return to CDX Home](#)

Figure 3-15. CDX Lexis Nexis Identity Verification

EPA United States Environmental Protection Agency

Home About Recent Announcements Terms and Conditions FAQ Help Virtual Assistant

CDX CDX Registration: LexisNexis [Contact Us](#)
Logged in as JDOE.REGISTRATION2 ([Log out](#))

1. Identity Verification 2. ESA

The program you are registering for requires additional proof of identity. Identity verification allows the EPA to confirm applicants have provided sufficient identity information in order to conduct business safely and securely. Your options are to use the electronic identity proofing service for immediate access to your program service or to print and submit a signed form through U.S. Postal Mail to the U.S. Environmental Protection Agency. **Note:** [Additional LexisNexis® Information](#)

LexisNexis® Instant ID

Legal Name

john doe

Home Address

Address Line 1*

Address Line 2

City* State*

If you do not pass LexisNexis verification you will be prompted to view, print, and sign a paper ESA. If this happens simply view and sign the paper ESA by clicking the 'Paper Verification' link and then closing the resulting window. This will bring you to the "MyCDX" screen. Reach out to the CDX help desk for further instructions.

When you are done filling out your personal information, scroll to the bottom of the Identity Verification screen. Then, check the box as shown below and click the 'Proceed to Verification' button (Figure 3-16).

Once you have passed identity verification, you will be directed to choose and answer 5 challenge questions. These will be used when signing and submitting reports in CAER. After entering your answers, click the 'Save Answers' button (Figure 3-17).

You will then be prompted to electronically sign an ESA. Click the 'Sign Electronically' button as seen below. Click 'Accept' in the pop-up window that appears after clicking the button (Figure 3-18). Remember that you may be able to use the same Electronic Signature Agreement (ESA) in CDX that you use for other programs and/or systems in CDX. You may need additional ESAs for additional organizations you are associated with. You should reach out to the help desk if you have questions about this.

Figure 3-16. CDX Lexis Nexis Identity Verification

Home Address
538 Cajundome Blvd
Address Line 2
Lafayette Louisiana 70506

Home or Personal Phone
(337) 777-7777

Date of Birth
Month* Day* Year*

Last 4 of SSN
**** Show SSN

The name above is me. Please proceed with LexisNexis® Validation.

Proceed with Verification [Paper Verification](#) [Exit](#)

EPA Home | [Privacy and Security Notice](#) | [Accessibility](#) | CDX Help Desk: 888-890-1995 | (970) 494-5500 for International callers | [About CDX](#) | [Frequently Asked Questions](#) | [Terms and Conditions](#) | [Contact Us](#)



Figure 3-17. Verification Questions

CDX Registration: Additional Verification

1. Identity Verification ✓

2. Electronic Signature Agreement

You are registered for a program that requires eSignature PIN Verification. Please select five (5) challenge questions and answers. The questions that you select should be questions that you can remember, but difficult for anyone else to guess.

Select 5 Challenge Questions and Answers

What is your favorite TV show?	▼	show
What is your favorite vacation destination?	▼	destination
Where did you first meet your spouse?	▼	spouse
What is your favorite book?	▼	book
What is your favorite pet's name?	▼	name

Save Answers

Figure 3-18. CDX Electronic Signature Agreement

Electronic CDX Electronic Signature Agreement

The CDX electronic signature agreement (ESA) is an agreement between yourself and CDX that will authorize your electronic signature. By signing the ESA you agree to adhere to the conditions listed on the agreement below. Once the ESA has been signed, you will be authorized to sign and/or encrypt information for your data flow. For any questions regarding the CDX ESA, please contact the [CDX Help Desk](#).

Signing an electronic document on behalf of another person is subject to criminal, civil, administrative, or other lawful action.

penalties for submitting false information, including the possibility of fine and imprisonment.

(13) **Agree to protect the electronic signature credential**, consisting of my Central Data Exchange (CDX) user identification and password, from use by anyone except me. Specifically, I agree to maintain the secrecy of the password; I will not divulge or delegate my user name and password to any other individual; I will not store my password in an unprotected location; and I will not allow my password to be written into computer scripts to achieve automated login.

(14) **Agree to immediately contact the U.S. EPA CDX Help Desk** after suspecting misuse of my account. I will contact the CDX Help Desk at 1-888-890-1995 as soon as possible, but no later than 24 hours, after suspecting or determining that my user name and password have become lost, stolen, compromise or used inconsistent with CDX Terms and Conditions at <https://cdx.epa.gov/terms>

Name of electronic signature holder: Mr Joshua Martin

Signature: _____

Date: _____

PLEASE MAIL THIS DOCUMENT AS SOON AS POSSIBLE TO:

U.S. Environmental Protection Agency

Sign Electronically [Cancel](#)

CDX Help Desk: 888-890-1995 | (970) 494-5500 for International callers



Figure 3-19. eSignature Screen

eSignature Widget

1. Authentication

Log into CDX

User:
JOSMARTIPREREGISTER

Password:

Show Password

Login

Enter all required information in the 'eSignature Widget' pop-up (Figure 3-19). At the end of the 3 steps, click the 'Sign' button to complete the process.

Following clicking to sign the ESA you should receive an email that the process is complete. You will also be redirected to the "MyCDX" screen (Figure 3-20) inside your CDX account. When this happens, your account should be activated automatically. If you are a certifier, then the 'NEI Certifier' link in the 'Role' column on the "MyCDX" screen will be active and clickable. If you are a preparer, then "Preparer" will appear under your Role.

Whenever you want to access CAERS, you'll go to CDX and login to enter your credentials. For security reasons, CDX forces users to change their password every 90 days, so make sure you have your most recent password available to you. Once you've entered your login and password, you will be taken to your "My CDX" page.

Figure 3-20. MyCDX Page

The screenshot displays the EPA MyCDX interface. At the top left is the EPA logo and the text "United States Environmental Protection Agency". A navigation bar includes links for Home, About, Recent Announcements, Terms and Conditions, FAQ, Help, and Virtual Assistant. The main header area shows "CDX Central Data Exchange" with a "Contact Us" link and the user's login status: "Logged in as JSMITHSHRINGTIN (Log out)". Below this is a sub-navigation bar with buttons for MyCDX, Inbox, My Profile, Submission History, Payment History, and E-Enterprise Portal. The main content area is divided into two columns. The left column, titled "Services", contains a table with columns for Status, Program Service Name, and Role. A single row is visible for "CAER: Combined Air Emissions Reporting" with the role "NEI Certifier" highlighted by a red box. Below the table are two buttons: "Add Program Service" and "Manage Your Program Services". The right column, titled "CDX Service Availability", contains a link: "See the status for all program services". Below that is a "News and Updates" section with the text "No news/updates.". The footer contains contact information for the CDX Help Desk (888-890-1995 | (970) 494-5500 for International callers) and links for EPA Home, Privacy and Security Notice, Accessibility, About CDX, Frequently Asked Questions, Terms and Conditions, and Contact Us. The EPA logo is also present in the bottom right corner.

3.4 Gain Access to CAERS and your Facility

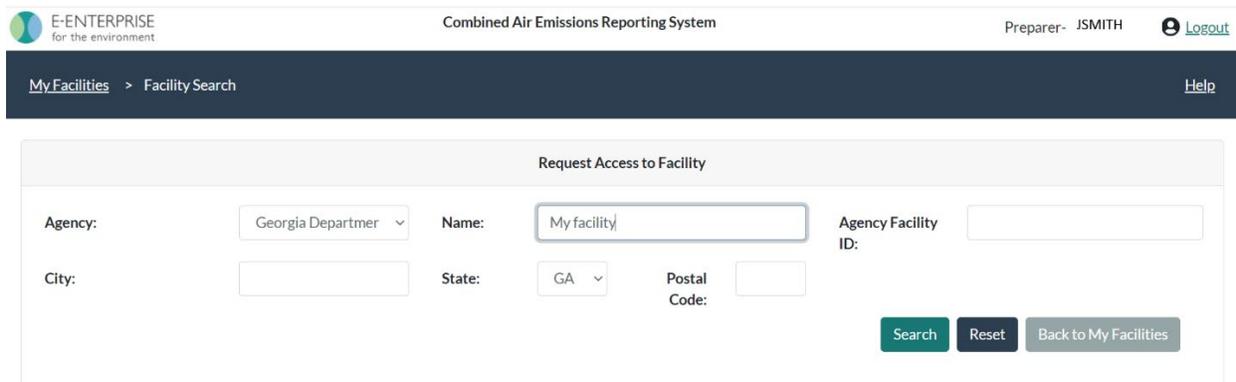
Once you click on your role, you will be re-directed to enter CAERS, and you will see “My Facilities” (Figure 3-21). Click on the “Request Access to a New Facility” button to request that your SLT verify that you are associated with the correct facility.

Figure 3-21. “My Facilities” Page in CAERS



The next screen will allow you to search for your facility by entering your SLT agency, name of your facility, and other information. Once you’ve entered it, click “Search” to find your facility (Figure 3-22).

Figure 3-22. Facility Search in CAERS



A list of facilities matching your search criteria will appear. Be sure to only select the facility you are reporting and/or certifying for. Once you have selected it, click “Request Access” (Figure 3-23). You will

be asked to confirm you have selected the correct facility. Click “Confirm”, or click “Cancel” to go back to the previous screen. You will receive an email from your SLT to confirm or reject your request for access to the facility you selected. When your request has been accepted, when you enter CAERS again, you should see your facility, listed in your “My Facilities” page (Figure 3-24).

Figure 3-23. Request Access to Selected Facility

Request Access to Facility

Agency: Georgia Department Name: Visy Paper Agency Facility ID:

City: State: GA Postal Code:

Filter Table:

Facility Name	Agency Facility ID	Address
My facility	XXXXXX	123 Main Street, Mytown, GA 12345

1

Figure 3-24. "My Facilities" Page Listing Facilities

My Facilities

My Notifications

Agency ID:12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345

4 Reporting Emissions and Facility Information via the User Interface

4.1 Navigating the User Interface

4.1.1 General Description of User Interface Features

This section will help you understand the basics about navigating the CAERS User Interface (UI), that will be helpful whether you choose to do your reporting via UI, bulk entry, or bulk upload. The UI has many pages and data entry points, there are some common themes throughout the UI. This list will help you understand the general layout of the UI and its characteristics. Specific features are explained in more detail, including screenshots, in subsequent sections and are not duplicated here to avoid repetition.

General features (refer to Section 4.1.3, Figure 4-3):

- Breadcrumbs at the top of the screens displaying the path that got you to the current screen from previous screens.
- Submission steps bar at the top of the screen that indicates what step you are on in the submission process.
- A menu of links to different facility and emissions data pages on the left-hand side of the screen, that will help you find the relevant screens for viewing and data entry. Where multiple units exist, the menu can be expanded and collapsed.
- Link to “MyCDX” at the bottom of the screen.
- Link to “Help” at the top right of your screen that takes you to a page containing the help desk contact information and additional resources.

Data entry features:

- Organization of data in each screen in boxes. For example, facility information is organized in the following boxes: Facility Information, Facility North American Industrial Classification System (NAICS) Codes, Contact Information (Section 4.2.1, Figure 4-5. Facility Information Page).
- Greyed out data entry boxes indicating where data is not expected to be changed by the user (Section 4.2.1, Figure 4-6, for example).
- Drop down menus in some of the data entry boxes to assist the user in entering the relevant data without errors (Section 4.2.1, Figure 4-6 for example).
- Pop-up windows directing the user to make a choice or enter specific information related to the page the user is in (Section 4.2.1, Figure 4-7, for example).
- Data entry quality checks (warnings in purple, critical errors in red) to help the user to address issues and corrections before submission (Section 4.2.2, Figure 4-11, for example)
- “Trash can” icons to delete specific sub-facility components. These are not be used when that component existed in a previous submission. If data was entered in error during the current submission, the trash can should be used. If the data existed in a previous submission, then the component operating status should be changed to temporarily or permanently shut down (as the case may be), and the year of that change should be recorded as well (Section 4.2.1, Figure 4-6 for example).
- Links for sub-facility components on lists to indicate when the user can edit them from there (Section 4.2.2 ,Figure 4-10, for example).
- Process of adding sub-facility components. These must be added first before they can be associated with other components. When a component is added as new, the associations won’t

show up on the screen for that component until the component information has been filled out and saved (for example, compare screens for Figure 4-11 and Figure 4-13 in Section 4.2.2). Then, the component page can be re-opened and boxes for the associations will appear.

4.1.2 Emissions Reports Page

From “My Facilities”, click on Begin/Continue Reporting. This will take you to the “Emissions Reports” page, where you can see all the reports for that facility (See Figure 4-1 for a new report, and Figure 4-2 for a report in progress). The CAER system will contain your report from the last year you submitted one, which will serve as a starting point for you to begin a new report for the current inventory year you are reporting.

From this screen you have options to work on your report as follows:

- If you will be reporting via the UI or Bulk Entry:
 - To start your current report click on “Create New Report” (Figure 4-1) to start reporting. This will prepopulate your current year report with your previous year data. You will be re-directed to the facility “Report Summary” page. If your facility has control equipment, you should also familiarize yourself with Appendix A before beginning a report.
 - To continue your current report if you have already started it in a previous session, click “Continue” to be redirected to the UI (Figure 4-2).
- If you will be reporting using Bulk Upload:
 - You can download your previous year in the pre-formatted template that you can then use as a starting point to edit and enter your current year report. If you are using bulk upload to enter your report, refer to Section 5 and, if your facility has control equipment, refer to Appendix A before beginning a report.
 - Once you’ve filled out your template with your current report, you can upload it from this screen as well by clicking on “Upload Report”.
- If you would like to view a previous year report, you can click on “View” to enter the UI and see the report without modifying it.
- If you find that your current year report is in error and would like to start over, you can click on the “Delete” button. Note that if you delete a previous year report, you will not be able to get that data back easily and recovery may take several weeks.

Note that, at this time, you will not be able to re-submit a previous year report for a previous reporting year.

Figure 4-1. Begin Emissions Report

E-ENTERPRISE for the environment Combined Air Emissions Reporting System Preparer- JSMITH Logout

My Facilities > Emissions Reports Help

Agency ID:12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
Agency: NEOPWD

Emissions Reports	
2020 Report	Upload Report Create New Report
2018 Report	View Download as Template Delete

EPA Home | MyCDX | Accessibility Notice | Privacy and Security Notice

Figure 4-2. Emissions Report Page

E-ENTERPRISE for the environment Combined Air Emissions Reporting System Preparer- JSMITH Logout

My Facilities > Emissions Reports Help

Agency ID:12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
Agency: GADNR

Emissions Reports	
2020 Report	Upload Report Continue Download as Template Delete
2019 Report	View Download as Template Delete
2017 Report	View Download as Template Delete

EPA Home | MyCDX | Accessibility Notice | Privacy and Security Notice

4.1.3 Report Summary Page

Once you have selected a facility and report from the “My Facilities” page, you will be taken to a “Report Summary” page (Figure 4-3). Your new report will be preloaded based on your previous year submission, and include a list of pollutants for that facility, the reported emissions in the current report, and the tons for each pollutant that were reported in your facility’s previous submission.

Figure 4-3. Facility Report Summary Page

Agency ID:12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345
 2019 Emissions Report
 Agency: GA

Report Facility & Emissions Information Perform Quality Checks Submit to SLT Authority Approved by SLT Authority

Pollutant	Type	Fugitive Amount	Stack Amount	Units of Measure	2020 Reported Emissions	Previous Year Reported Emissions	Previous Submittal Year
Carbon Monoxide	CAP	0	5.68	Tons	5.68	5.673	2019
Nitrogen Oxides	CAP	0	96.103	Tons	96.103	95.853	2019
Sulfur Dioxide	CAP	0	12.9215	Tons	12.9215	12.922	2019
Volatile Organic Compounds	CAP	41.1606	100.4	Tons	141.5606	141.5466	2019
Total Emissions (Tons)	--	--	--	--	256.2651	255.9946	--

Download Report

Preparer/NEI Certifier Attachments

Date	User ID	User Name	Comments	Attachments
1/6/21	NEI Certifier - JULIAGAMAS	Julia Gamas		Sample attachment for CAERS.xlsx

Attach Report Document

Run Quality Checks

EPA Home | MyCDX | Accessibility Notice | Privacy and Security Notice

You will see breadcrumbs in the dark blue bar at the top of the screen. These display the path that got you to the current screen from the “My Facilities” page. By clicking on any of the links, you will be returned to a previous page. For example, from “2020 Emissions Report” you can click on “Emissions Reports” to be taken back to that page.

Below the breadcrumbs, at the top center of the screen, you’ll see a bar showing the four main steps of submission that will help guide you through the submission process:

- Report Facility & Emissions Information,
- Perform Quality Checks,
- Submit to SLT (your State, Local, or Tribal) Authority, and
- Approved by SLT Authority.

On the left-hand side you will see an expandable menu with links that will take you to different pages:

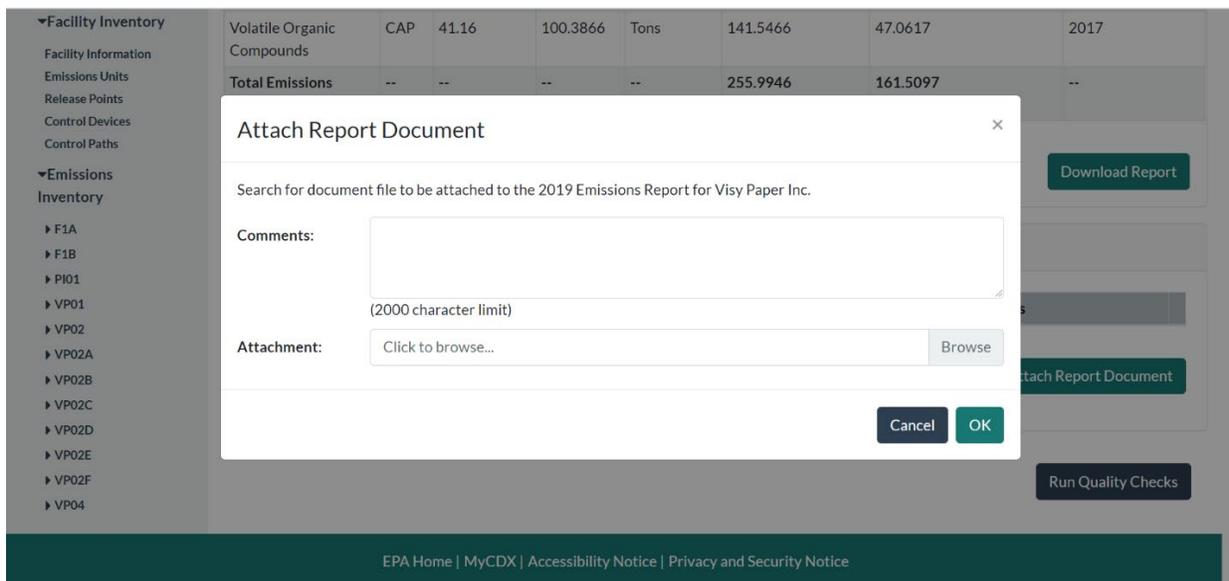
- Report History (shows a list of actions associated with the report over time and who performed them, for example, when it was created, submitted, whether the SLT has approved it).
- Quality Assurance (QA) Checks (takes you to the list of QA checks that your report, as it stands, is currently generating) see Section 7.
- Data Bulk Entry (takes you to the bulk entry tabs).

- Facility Inventory data (with summary pages at different levels of detail: facility information, emissions units, release points, control devices, control paths) see Section 4.2.1.
- Emissions Inventory (a collapsible list of units that you can expand to view the processes associated with each unit) see Section 4.3.

4.1.4 Including an Attachment in Your Report

You can add a file to your report to explain your calculations where CAERS has not done the calculations for you (e.g. when your estimation method is mass balance, engineering judgement, or the emission factor you are using is not listed in the CAERS menu). To attach a file to your report, go to the “Report Summary” page from the left-hand side menu. Below the “Report Summary” section you will see a section titled “Preparer/NEI Certifier Attachments”. Click on the “Attach Report Document” on the bottom right of that section (see Figure 4-4). A window will pop up where you will be able to enter comments if needed, and then select the file to attach by using the “Browse” button to find and retrieve your attachment. Click “OK” when you have selected the right file to attach. Your SLT may require that the attachment should show the formulas and their application in an excel file. For your SLT, a verbal description may not be sufficient, as your SLT should be able to verify your estimates. Please be advised that if you do not submit your attachment in the format your SLT requires, this may result in you report being rejected and sent back to you automatically.

Figure 4-4. Including an Attachment



Once you have attached the file you will see it listed in the attachments section. It will also appear listed in the “Report History” page that you can get to from the left-hand side menu of your screen.

If you need to remove an attachment, from within the “Report Summary” page, click on the garbage icon to the right of the document attachment name. You will be asked to confirm the deletion. Once deleted, the attachment will no longer appear in the list of attachments. However, a record of the attachment upload and its removal will appear in the “Report History” page to help you keep track of your work and ensure you have the most updated attachment you wish to submit with your report.

4.2 Facility Inventory

4.2.1 Facility Information

From the left-hand side menu, click on “Facility Inventory” to expand that menu. Click on “Facility Information” to get to the facility information screen (Figure 4-5).

Figure 4-5. Facility Information Page

MyFacilities > Emissions Reports > 2019 Emissions Report

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

Agency ID: 12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
2019 Emissions Report
Agency: GA

Report Summary
Report History
Quality Checks
Facility Inventory
Emissions Units
Release Points
Control Devices
Control Paths
Emissions Inventory
F1A
F1B
P01
VP01
VP02
VP02A
VP02B
VP02C
VP02D
VP02E
VP02F
VP04

Facility Information

Agency Facility ID: 12345678
Facility Name: Facility Inc.
Facility Address: 123 Main Street
Mytown, 12345
BIA Code:
Comments:

Latitude: XX.XXXXX
Longitude: -YY.YYYYY
Mailing Address: 999 Lincoln Street
Onetown, 54321

Operating Status: Operating
Status Year: 2017
County: Rockdale

Facility NAICS Codes

NAICS Description	NAICS Code	Primary
Industrial and Commercial Fan and Blower Manufacturing	333412	
Paperboard Mills	322130	Primary

Facility Contact Information

Contact Type: Emissions Inventory
Contact Name: Jon Miller
Contact Address: 123 Nowhere
Nowhere, NC 27517

Phone Number: 919-541-3333
Email Address: ml@aint.org
Mailing Address: 123 Somewhere
Somewhere, ID 12345

Ext.:
County: Orange

Facility Contact Information

Contact Type: Permit
Contact Name: Jon Smith
Contact Address: 123 Street
Smithville, KY 12345

Phone Number: 919-541-1111
Email Address: jon@smith.com
Mailing Address:
County:

Add Facility Contact Information

You will be able to edit facility information by clicking on the “Edit” button at the far right, which will take you to the facility information edit page (Figure 4-6). Note that fields that have been locked will not be editable. They will appear in gray. You should contact your SLT authority (for example, GA DNR) if you think there is an error in locked fields. A gray arrow within a data field box indicates a drop-down menu is available to choose your entry.

- **Facility Operating Status:** If the facility operated partially in the reporting year and was permanently shut down in the reporting year, you will need to leave the “Operating” status unchanged for the year you are reporting, and change it the following reporting year. Once you change the operating status to “Permanently Shut-down”, all units, processes, controls and release points will also be automatically set to “Permanently Shutdown”, and you will no longer be able to enter data for the facility. For example, if the facility was operated in part in 2019 and shut down for the rest of 2019, you would change its status to permanently shut down in 2020.

Figure 4-6. Editing Facility Information

The screenshot shows a web application interface for editing facility information. The interface is divided into four main sections: "Report Facility & Emissions Information", "Perform Quality Checks", "Submit to SLT Authority", and "Approved by SLT Authority". The "Report Facility & Emissions Information" section is active and contains several sub-sections: "Facility Information", "Facility NAICS Codes", and "Facility Contact Information".

Facility Information:

- Agency Facility ID: 12345678
- Facility Name: Facility Inc.
- Facility Address: 123 Main Street
- City: Mytown
- Mailing Street Address: 999 Lincoln Street
- County: Washington
- Latitude: XX.XXXXX
- Longitude: -YY.YYYYY
- Operating Status: Operating
- Status Year: 2017

Facility NAICS Codes:

NAICS Description	NAICS Code	Primary
Industrial and Commercial Fan and Blower Manufacturing	333412	
Paperboard Mills	322150	Primary

Facility Contact Information:

Contact Type	Contact Name	Contact Address	Phone Number	Email Address	Mailing Address	Ext.	County
Emissions Inventory	Jon Miller	123 Nowhere Nowhere, NC 27917	919-541-2320	mlj@staint.org	123 Somewhere Somewhere, ID 12345		Orange

- Adding NAICS Codes:** Under the “Facility Information” box, you will be able to add a NAICS code. More than one NAICS are allowed as secondary NAICS codes, but a single NAICS should be designated as the primary NAICS code. When you click the “+” button at the bottom right of that box, a pop-up window will appear to help you search for your NAICS (Figure 4-7). Type the digits of your NAICS and a menu for the NAICS that contain those numbers will appear to help you select the correct code (Figure 4-8). Once you’ve selected your NAICS, click the “Submit” button. If you have questions about NAICS you can reference the [U.S. Census Bureau](#). NAICS change every 5 years. At the time this document was written, the codes being referenced were from 2017.
- Facility contact information:** Below the NAICS code box, you should find the “Facility Contact Information” box(es). You can enter as many contacts for the facility as you need. For example, you may enter a point of contact as the facility expert on emissions inventory criteria pollutant questions, and another for the Toxics Release Inventory expert. Click on the “Add Facility Contact Information” at the bottom right of the screen to open a window to enter new facility contact information (Figure 4-9). Enter all relevant information such as name, number, and make sure to select a “Contact Type”.

You will be required to enter at least one contact for National Emissions Inventory (NEI) reporting. This should be the person that your SLT authority can reach out to if they have questions about the submission. If a contact person for the NEI is missing, a QA error will appear at the top of the “Facility Information” page. For the NEI contact select contact type: “Emissions Inventory”. Click “Save” after adding the information. The application will automatically take you back to the “Facility Information” page and you should be able to see your contact information displayed at the bottom of the page. You can also edit an existing contact by clicking on the “Edit” button for that contact. This will take you to that contact’s edit page where you will be able to make changes.

Figure 4-7. Edit Facility NAICS codes

The screenshot displays a web application interface for editing facility NAICS codes. A modal dialog is open in the center, titled "Select an NAICS Code to add to the facility". The dialog contains a text input field labeled "Select NAICS Code:", a checkbox labeled "Make this Primary NAICS for facility?", and two buttons: "Cancel" and "Submit".

The background interface includes a sidebar on the left with the following navigation options:

- Facility Inventory
 - Facility Information
 - Emissions Units
 - Release Points
 - Control Devices
 - Control Paths
- Emissions Inventory
 - F1A
 - F1B
 - F01
 - VP01
 - VP02
 - VP02A
 - VP02B
 - VP02C
 - VP02D
 - VP02E
 - VP02F
 - VP04

The main content area shows the following details for a facility:

- BIA Code:** [Blank]
- Comments:** [Blank]
- NAICS Description:** Paperboard Mills
- Primary:** Primary (with a dropdown arrow)

Below this, there are two sections of **Facility Contact Information**, each with an "Edit" button:

Facility Contact Information					
Contact Type:	Emissions Inventory	Phone Number:	919-541-3333	Ext:	
Contact Name:	Jon Miller	Email Address:	mill@salnt.org	County:	Orange
Contact Address:	123 Nowhere Nowhere, NC 27517	Mailing Address:	123 Somewhere Somewhere, ID 12345		

Facility Contact Information					
Contact Type:	Permit	Phone Number:	919-541-1111	Ext:	
Contact Name:	Jon Smith	Email Address:	jon@smith.com	County:	
Contact Address:	123 Street Smithville, KY 12345	Mailing Address:			

At the bottom right of the main content area, there is a button labeled "Add Facility Contact Information".

The footer of the application contains the text: "EPA Home | MyCDX | Combined Air Emissions Reporting (CAER) | CAER Program Contacts".

Figure 4-8. Find and Select NAICS Code

Combined Air Emissions Reporting Form

Select an NAICS Code to add to the facility

Select NAICS Code:

334

- 111334 - Berry (except Strawberry) Farming
- 333411 - Air Purification Equipment Manufacturing
- 333412 - Industrial and Commercial Fan and Blower Manufacturing
- 333413 - Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
- 333414 - Heating Equipment (except Warm Air Furnaces) Manufacturing
- 333415 - Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing
- 334111 - Electronic Computer Manufacturing**
- 334112 - Computer Storage Device Manufacturing
- 334113 - Computer Terminal Manufacturing
- 334118 - Computer Terminal and Other Computer Peripheral Equipment Manufacturing
- 334119 - Other Computer Peripheral Equipment Manufacturing
- 334210 - Telephone Apparatus Manufacturing
- 334220 - Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
- 334290 - Other Communications Equipment Manufacturing
- 334310 - Audio and Video Equipment Manufacturing
- 334411 - Electron Tube Manufacturing
- 334412 - Bare Printed Circuit Board Manufacturing
- 334413 - Semiconductor and Related Device Manufacturing
- 334414 - Electronic Capacitor Manufacturing
- 334415 - Electronic Resistor Manufacturing

Emissions Inventory Phone Number: 919-541-3333 Ext:

Jon Miller Email Address: ml@saint.org

Figure 4-9. Enter Facility Contact Information

Contact Information

Prefix:

First Name: Jon Miller

Phone Number: 1234567890

Email Address:

Contact Street Address:

City:

County:

Mailing Street Address:

City:

ZIP code:

Contact Type: Emissions Inventory

- Asbestos
- Billing/Invoice
- Compliance
- Emissions Inventory**
- Environmental
- Facility
- Monitoring
- NSR Billing
- NSR Permitting
- On Site Operator
- Permit
- Responsible Official
- Technical
- Title V Permission

Cancel Save

4.2.2 Emission Units Page

From the left-hand side menu, click on “Emissions Units” to go to a list of units in your facility (Figure 4-10).

- **To add a unit**, click on the plus sign at the bottom of the list. This will take you to a blank unit page (Figure 4-11). Add all the data fields. Messages will appear where required information is missing. When you have entered all unit information, click “Save” and this will take you back to the Units page. After you have finished with your entries or edits, click “Save” to go back to the “Emissions Units” page. Your new unit will now be listed on that page as an existing unit. If you are entering new unit data and find you have begun entering it in error, click “Cancel” to take you back to the “Emissions Units” page without saving any edits.

Figure 4-10. Emissions Units Page

The screenshot displays the 'Emissions Units' page. At the top, there is a breadcrumb trail: 'My Facilities > Emissions Reports > 2019 Emissions Report'. A progress bar shows four steps: 'Report Facility & Emissions Information' (active), 'Perform Quality Checks', 'Submit to SLT Authority', and 'Approved by SLT Authority'. The main content area is titled 'Emissions Units' and contains a table with the following data:

Unit ID	Unit Type	Unit Description	Operating Status	
F1A	Boiler	Boiler	Operating	🗑️
F1B	Unclassified		Operating	🗑️
PI01	Boiler	Alternative fuels power island	Operating	🗑️
VP01	Boiler	Nebraska Package boiler	Operating	🗑️
VP02	Paper Machine	Paper machine	Operating	🗑️
VP02A	Unclassified		Operating	🗑️
VP02B	Unclassified		Operating	🗑️
VP02C	Unclassified		Operating	🗑️
VP02D	Unclassified		Operating	🗑️
VP02E	Unclassified		Operating	🗑️
VP02F	Unclassified		Operating	🗑️
VP04	Boiler	PSS Boiler	Operating	🗑️
+				

The left-hand side menu includes sections for 'Report Summary', 'Report History', 'Quality Checks', 'Facility Inventory', and 'Emissions Inventory'. The 'Emissions Inventory' section is expanded, showing a list of unit IDs: F1A, F1B, PI01, VP01, VP02, VP02A, VP02B, VP02C, VP02D, VP02E, VP02F, and VP04.

Figure 4-11. Adding a New Unit

My Facilities > Emissions Reports > 2019 Emissions Report Help

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

Emission Unit Information

Unit ID: Unit Type Code: Unit Status:

Unit Description: Unit Status Year:

Unit Design Capacity: Unit Design Capacity UoM:

Warning: The design capacity should be reported for unit type code: Boiler.

Comments:

Agency ID: 12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
2019 Emissions Report
Agency: GA

Report Summary
Report History
Quality Checks
▼ **Facility Inventory**
Facility Information
Emissions Units
Release Points
Control Devices
Control Paths
▼ **Emissions Inventory**
F1A
F1B
PI01
VP01
VP02
VP02A
VP02B
VP02C
VP02D
VP02E
VP02F
VP04

- **To edit an existing unit**, from the “Emissions Units” page click on the corresponding unit ID from the list of units to be taken to that unit’s page (Figure 4-12). On the unit page, you’ll see the “Emission Unit Information” box. Click on the “Edit” button at the top right of the screen to make changes to the emissions unit information. This will take you to that unit’s edit screen (Figure 4-13). When you are finished with your edits click “Save” to take you back to the “Emissions Units” page. If you entered data by mistake, click “Cancel”, the changes will not be saved, and you will be returned to the “Emissions Units” page.

Figure 4-12. Example of a Page for a Specific Unit

2019 Emissions Report
Agency: GA

Report Summary
Report History
Quality Checks

Facility Inventory
Facility Information
Emissions Units
Release Points
Control Devices
Control Paths

Emissions Inventory
F1A
F1B
PI01
VP01
VP02
VP02A
VP02B
VP02C
VP02D
VP02E
VP02F
VP04

Emission Unit Information [Edit]

Unit ID: VP01 Unit Type Code: Boiler Unit Status: Operating
 Unit Description: Nebraska Package boiler Unit Status Year: 2008
 Unit Design Capacity: 279 Unit Design Capacity UoM: E6BTU/HR UoM Description: MILLION BTU PER HOUR
 Comments: Back-up boiler

Processes Associated with this Emissions Unit

Process ID	SCC	
NOX1	10200601	[trash icon] +

Controls Associated with this Emissions Unit

Control	Description	Control Path
7894768	Flue Gas Recirculation	227

Figure 4-13. Editing a Unit

Agency ID:12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
2019 Emissions Report
Agency: GA

Report Summary
Report History
Quality Checks

Facility Inventory
Facility Information
Emissions Units
Release Points
Control Devices
Control Paths

Emissions Inventory
569
F1A
F1B
PI01
VP01
VP02
VP02A
VP02B
VP02C
VP02D
VP02E
VP02F
VP04

Report Facility & Emissions Information Perform Quality Checks Submit to SLT Authority Approved by SLT Authority

Emission Unit Information

Unit ID: F1A Unit Type Code: Boiler Unit Status: Operating
 Unit Description: Boiler Unit Status Year: 2019
 Unit Design Capacity: 200 Unit Design Capacity UoM: BBL/DAY
 Comments:

Processes Associated with this Emissions Unit

Process ID	SCC	
1	10300601	[trash icon]
ABCD	10100101	[trash icon]
Made up process	10100212	[trash icon] +

Controls Associated with this Emissions Unit

Control	Description	Control Path
7894768	Flue Gas Recirculation	227

- **To delete a unit**, you should only delete a unit using the garbage can icon if you added it to this year’s report and that addition was an error. If the unit existed in a previous year’s report, and is no longer in use, you should click on its ID and change its status from “Operating” to “Permanently Shutdown” and mark the status year as the year when it was shut down.
- **Important additional considerations about units:**

- **New but inactive units:** Please do not create a new unit and then mark it as temporarily or permanently shut down. If you have a new unit that will report emissions in a future year, add it in that future year report.
- **Relabeling pitfall:** Please do not relabel current units in the bulk upload template with new ID's. The system will not recognize these units as existing, effectively adding units to your facility instead of simply replacing the ID's. If you do, your facility inventory of record with EPA will reflect additional units and potential emissions that do not really exist in your facility. Your efforts in this regard will help us keep your facility inventory up to date.
- **Editing processes:** At the bottom of each unit's page, you will also see processes and controls associated with that unit. You can add, edit, or delete processes associated with this unit from this page by clicking on the process ID. See section 4.3.2 to learn how to add, edit, or delete processes.
- **Editing controls:** You can also edit controls from this page. Note that if no controls appear on the unit's page, but there are existing controls that should be associated with this unit, you must add those controls to the system first. They will appear on this unit page once you have done so. See section 4.2.4 to learn how to add, edit or delete controls.

4.2.3 Release Points Page

From the left-hand side menu, click on "Release Points" under the "Facility Inventory" heading. You will see a list of release points associated with the facility (Figure 4-14).

Figure 4-14. Release Points Page

Release Point ID	Release Point Type	Release Point Description	Operating Status
1	Vertical		Operating
FUG	Fugitive		Operating
SV01	Fugitive	Vertical stack associated with our Nebraska Package Boiler	Operating
SV02	Fugitive	exhaust from the paper machine	Operating
SV04	Horizontal	Exhaust from paper machine	Operating
SV05	Vertical	Vertical stack associated with fuel island	Operating
SVO3	Vertical	Vertical stack associated with Nebraska boiler	Operating
SVP04	Vertical	Vertical stack associated with the PSS Boiler (VP04)	Operating

- **To add a new release point,** click on the "+" sign at the bottom right of the list. This will take you to a blank release point page. Enter all relevant information. Messages will appear for

required fields. Dropdown menus are available for some data fields by clicking on the arrow in the data field box (Figure 4-15). Click “Save” to take you back to the “Release Points” page. Your new release point will now appear in the list of existing release points. If you entered new release point data by mistake, click “Cancel” so the changes will not be saved. You will be taken back to the “Release Points” page.

- **To edit an existing release point**, click on the release point ID from the list of release points. This will take you to that release point’s information page (Figure 4-16). Click on “Edit” at the top right of the screen for that release point. You will also be taken to the release point page (similar to that of a new release point), where you will enter all relevant information about that release point (Figure 4-17). A gray arrow icon next to a data field indicates a drop-down menu that will allow you to make a choice.
- **To delete a release point**, note that the garbage can icon on the “Release Points” page should only be used if you added a release point by mistake during this submission. If you are retiring a release point, then you must go into that release point’s screen by clicking on the release point ID from the list and change the operating status to “Permanently Shutdown”.
- **Important additional considerations about release points:**
 - **New inactive release points:** Please do not create a new release point and then mark it as temporarily or permanently shut down. If you have a new release point that will report emissions in a future year, add it in that future year report.
 - **Relabeling pitfall:** Please do not relabel current release points in the bulk upload template with new ID’s. The system will not recognize these release points as existing, effectively adding release points to your facility instead of simply replacing the ID’s. If you do, your facility inventory of record with EPA will reflect additional release points and potential emissions that do not really exist in your facility. Your efforts in this regard will help us keep your facility inventory up to date.

Figure 4-15. Adding a New Release Point

Agency ID:12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
2019 Emissions Report
Agency: GA

Report Summary
Report History
Quality Checks
Facility Inventory
Facility Information
Emissions Units
Release Points
Control Devices
Control Paths
Emissions Inventory
569
F1A
F1B
PI01
VP01
VP02
VP02A
VP02B
VP02C
VP02D
VP02E
VP02F
VP04

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

Release Point Information

Release Point ID:

Release Point Description:

Release Point Status:

Release Point Year:

Exit Gas Velocity Measure:

Exit Gas Velocity UoM:

Stack Height Measure:

Stack Height UoM:

Release Point Program System:

Comments:

Release Point Type:
Downward-facing Vent
Fugitive
Goose Neck
Horizontal
Unknown
Vertical
Vertical with Rain Cap

Latitude Measure:

Longitude Measure:

Fence Line Distance Measure:

Fence Line Distance UoM:

Exit Gas Flow Rate Measure:

Exit Gas Flow Rate UoM:

Stack Diameter Measure:

Stack Diameter UoM:

Exit Gas Temperature Measure (F):

On an existing release point's page, you can view processes and controls associated with that particular release point. See Section 4.3.2 on how to edit processes and Section 4.2.4 on how to edit controls. Once you have done so, they will appear in the release points page.

Figure 4-16. Example of a Page for a Release Point

My Facilities > Emissions Reports > 2019 Emissions Report Help

Agency ID:12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345
 2019 Emissions Report
 Agency: GA

Report Summary
 Report History
 Quality Checks
 Facility Inventory
 Emissions Inventory

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

[Edit](#)

Release Point ID:	SV04	Release Point Type:	Horizontal	Release Point Description:	Exhaust from paper machine
Release Point Status:	Operating	Latitude Measure:	33.66707	Fence Line Distance:	
Release Point Status Year:	2015	Longitude Measure:	-84.01793	Fence Line Distance UoM:	
Exit Gas Velocity Measure:	20	Exit Gas Flow Rate Measure:	240		
Exit Gas Velocity UoM:	FEET PER SECOND	Exit Gas Flow Rate UoM:	ACTUAL CUBIC FEET PER SECOND		
Stack Height Measure:	20	Stack Diameter Measure:	4	Exit Gas Temperature Measure (F):	200
Stack Height UoM:	FEET	Stack Diameter UoM:	FEET		
Release Point Program System:	Georgia Department of Natural Resources				
Comments:					

Processes Associated with this Release Point	
Process ID	SCC

Controls Associated with this Release Point		
Control	Description	Control Path

Figure 4-17. Editing a Release Point

My Facilities > Emissions Reports > 2019 Emissions Report Help

Agency ID:12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345
 2019 Emissions Report
 Agency: GA

Report Summary
 Report History
 Quality Checks
 Facility Inventory
 Emissions Inventory

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

[Cancel](#) [Save](#)

Release Point ID:	<input type="text" value="SV04"/>	Release Point Type:	<input type="text" value="Horizontal"/>		
Release Point Description:	<input type="text" value="Exhaust from paper machine"/>				
Release Point Status:	<input type="text" value="Operating"/>	Latitude Measure:	<input type="text" value="33.66024"/>	Fence Line Distance Measure:	<input type="text"/>
Release Point Year:	<input type="text" value="2015"/>	Longitude Measure:	<input type="text" value="-83.98888"/>	Fence Line Distance UoM:	<input type="text" value="FT"/>
Exit Gas Velocity Measure:	<input type="text" value="20"/>	Exit Gas Flow Rate Measure:	<input type="text" value="240"/>		
Exit Gas Velocity UoM:	<input type="text" value="FPS"/>	Exit Gas Flow Rate UoM:	<input type="text" value="ACFS"/>		
Stack Height Measure:	<input type="text" value="20"/>	Stack Diameter Measure:	<input type="text" value="4"/>	Exit Gas Temperature Measure (F):	<input type="text" value="200"/>
Stack Height UoM:	<input type="text" value="FT"/>	Stack Diameter UoM:	<input type="text" value="FT"/>		
Release Point Program System:	<input type="text" value="Georgia Department of Natural Resources"/>				
Comments:	<input type="text"/>				

Processes Associated with this Release Point	
Process ID	SCC

Controls Associated with this Release Point		
Control	Description	Control Path

4.2.4 Control Devices Page

Control devices will be reported differently than in previous years. Appendix A in this document explains the concepts surrounding controls. You should familiarize yourself with that section before proceeding to set up your facility's controls. Depending on your control set up, you will have the choice to work in the control device effectiveness and control device pollutant removal efficiencies of your control equipment either at the individual control level, or at the path level. While you are highly encouraged to provide the data at the individual equipment level, a very complex control set up with combinations of controls in sequence and in parallel may make it more tenable for you to report control efficiencies at the path level. Your SLT may require you to provide more detailed information, so you should check with your SLT authority before creating the controls and control paths portion of your emissions report.

From the left-hand side menu, click on "Control Devices" under the "Facility Inventory" heading. Because we are changing how controls should be reported, previously reported control data will not be prepopulated in your current year report. However, once you have entered control equipment data, you will see a list of control devices associated with the facility (Figure 4-18).

Figure 4-18. Control Devices Page

Control ID	Control Description	Operating Status	
123	Biofilter as an example control.	Operating	🗑️
7894768	Flue Gas Recirculation	Operating	🗑️
7894769	Selective Catalytic Reduction (SCR)	Operating	🗑️
A123	A house with a bag on it.	Operating	🗑️
			+

- **To add a new control device**, click on the "+" sign at the bottom right of the list of controls. This will take you to a blank control page (Figure 4-19). As with other sub-facility components, drop-down menus are available for fields that require a selection. For example, to select the operating status click on the gray arrow icon. Note that the control ID for each individual control must be unique within the facility. On the control's page, you will add the percent effectiveness. Add all relevant information, QA check messages will appear for data fields that

are required, for value ranges (for example, percent effectiveness must be less than 100%), and for other errors. Click on “Save” to add the new control to the list of existing controls. Now that the control has been added to the list of controls, you can edit it and associate it to paths and pollutants.

- **To edit an existing control device**, click on the control device ID from the list of controls. This will take you to that control device’s information page (Figure 4-20). Click on “Edit” which will open the edit screen for the control (Figure 4-21).

Figure 4-19. Adding a New Control

My Facilities > Emissions Reports > 2020 Emissions Report Help

Agency ID:12345678
FACILITY INC
123 Main Street
Mytown, GA 12345
2019 Emissions Report
Agency: GA

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

Control Device Information

Control ID: Operating Status:

Control Measure:

Control Description:

Control Number Operating Months: Percent Control Effectiveness:

Control Start Date: Control Upgrade Date:

Control End Date:

Control Upgrade Description:

Comments:

Facility Information
Emissions Units
Release Points
Control Devices
Control Paths

Facility Inventory

- Facility Information
- Emissions Units
- Release Points
- Control Devices
- Control Paths

Emissions Inventory

- F1A
- F1B
- PI01
- VP01
- VP02
- VP02A
- VP02B
- VP02C
- VP02D
- VP02E
- VP02F
- VP04

Figure 4-20. Example of a Page for a Control Device

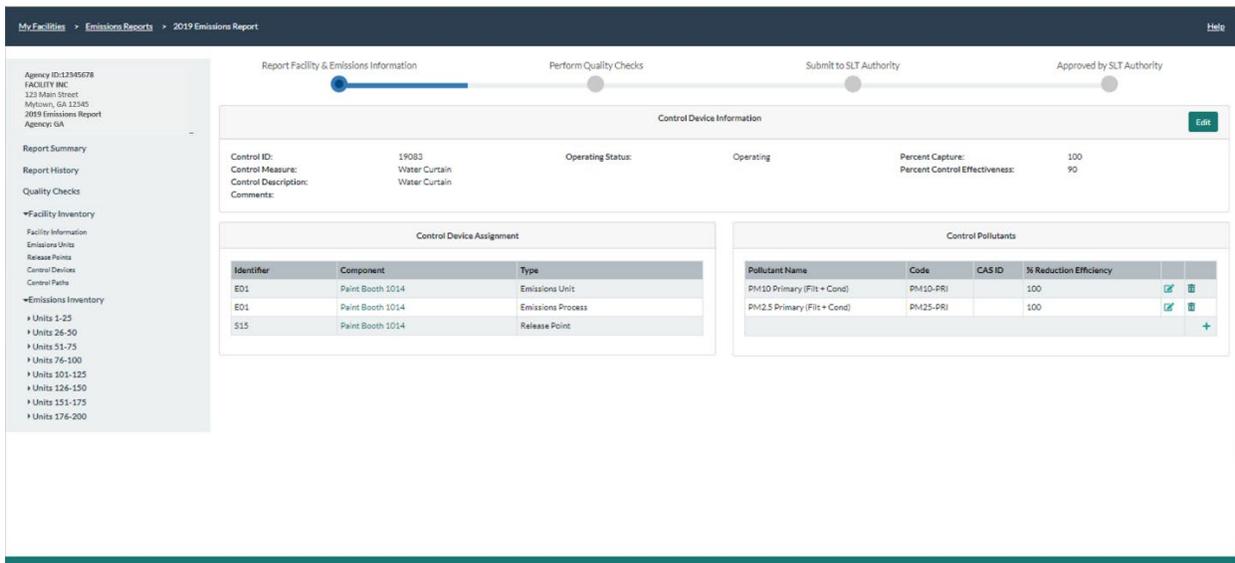
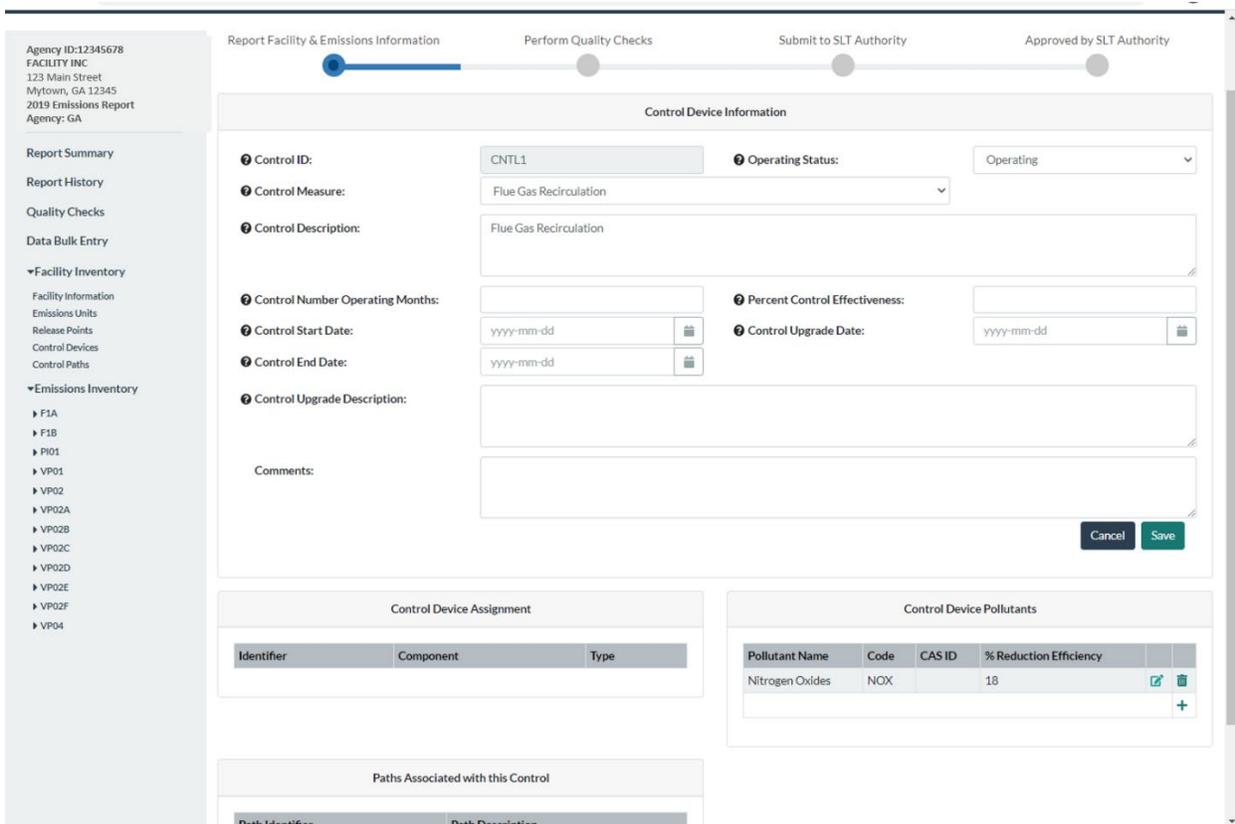


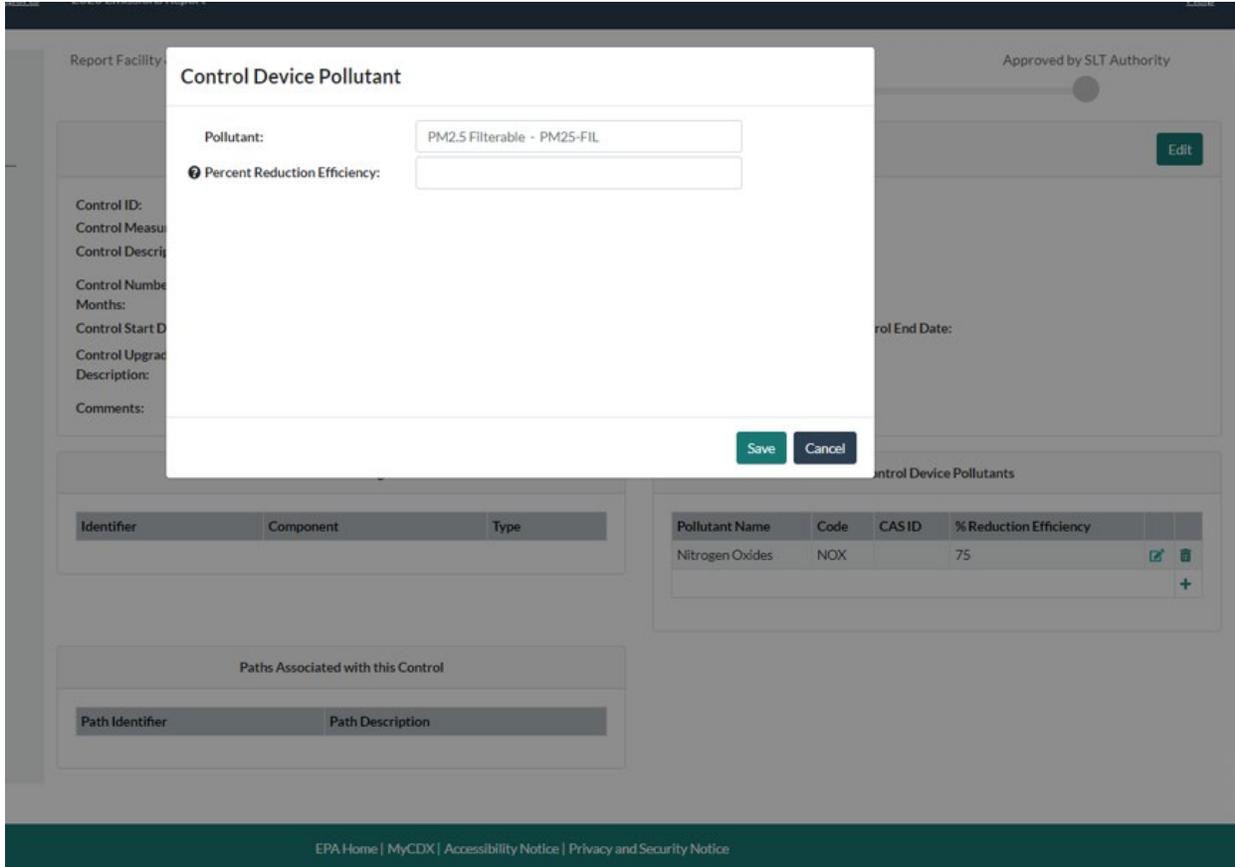
Figure 4-21. Editing a Control Device



- **To associate a pollutant with this control device**, click on the “+” sign at the bottom right of the “Control Device Pollutants” box. You will be taken to a pop-up window that will allow you to select a pollutant. Start typing the name of the pollutant or its abbreviation (for example, PM) and a list of possible pollutants will appear for you to make your selection

(Figure 4-22). When you have chosen the pollutant and entered the control percent reduction efficiency, click “Save” and you will be returned to the control device’s information page. Now, the pollutant you entered will appear in the list of pollutants.

Figure 4-22. Associating a Pollutant and Control Efficiency to a Control



- Control device assignment:** The Control Device Assignment box will show the components that are related to the control. For example, it will show the release point, emission unit, and emission process that are used by the control. You cannot do edits on this list in this screen. Instead, you have the ability to associate the control with these components through the Control Paths page (see Section 4.2.5).
- Paths associated with this control:** The path(s) that contain this control are also listed on the control device’s page. These are also not editable from this screen. You must go to the Control Paths link on the left-hand side menu on your screen to edit paths (see Section 4.2.5).
- To delete a control device,** if you find you have started to enter a new control in error, you can click “Cancel” to avoid saving the changes, and you will be returned to the “Control Devices” page. Please do not delete a control device if it was reported in a previous year. Instead, mark it as temporarily or permanently shut down to avoid having it remain idle in your facility inventory.
- Important additional considerations about control devices:**
 - Finding individual control equipment information:** Resources to find out information about your control release point apportionment (previously control capture efficiency) and control efficiency can include vendor specifications, and trade associations that may be able to

provide you with averages for the industry. However, you should consult with staff at your SLT with your questions about controls and your planned approach to make sure they approve of it before you have submitted the data.

- **Use of the control efficiency percentage:** Note that the overall percent controlled, as described in Section 4.3.2.2, will be the value factored into the emissions calculations when the calculation method calls for its application. For example, the overall control % will not be applied to your calculations if you are reporting stack test data.
- **New but inactive control devices:** As with other sub-facility components, please do not create a new control device in your report, and then mark it as temporarily or permanently shut down. If you have a new control device that will report emissions in a future year, add it in that future year report.
- **Relabeling pitfall:** Please do not relabel current control devices in the bulk upload template with new ID's. The system will not recognize these controls as existing, effectively adding control to your facility instead of simply replacing the ID's. If you do, your facility inventory of record with EPA will reflect additional controls and potential emissions that do not really exist in your facility. Your efforts in this regard will help us keep your facility inventory up to date.

4.2.5 Control Paths Page

Control devices will be reported differently than in years prior to the 2019 inventory year, and this includes associating controls with specific paths. Appendix A in this document explains the concepts surrounding controls and control paths. You should familiarize yourself with that section before proceeding to set up your facility's control paths.

By clicking on the left-hand side menu, click on "Control Paths" under the "Facility Inventory" heading. You will be taken to the control paths page (Figure 4-23), where you will be able to see a list of control paths associated with that facility. If this is your first time reporting paths, you will not see any paths displayed, and you will be creating paths and populating that list from this screen.

- **To add a new control path,** click on the "+" sign. This will take you to a blank path page (Figure 4-24). You will be asked to enter a Path ID, which should be unique within the facility, and a brief description to help identify which path it is. Click "Save" and this will take you back to the Control Paths page. Now your new path will appear in the list of existing paths and you will be able to edit it.
- **To edit a control path,** click on its ID from the "Control Paths" page and you will be taken to that path's information page (Figure 4-25). Click on "Edit" to edit the path information (Figure 4-26). When you are finished with your edits click "Save". This will take you back to the information page for that path. If the changes are an error, you can click "Cancel".
 - **Adding control devices to a path:** Click on the path you want to add controls to from the "Control Paths" page. This will take you to that path's information page (Figure 4-25). On the bottom right of the "Control Path Assignment" box, click on the "+". This will take you to a pop-up window that will allow you to place either a control or a child path into the path you are editing (Figure 4-27). Enter the sequence number for its position in the path with respect to other controls. For example, if it is the second control device in the path you will enter 2.

Next, enter either a control device or a control path (you must select one or the other, but not attempt to enter both a control and a path here). Drop-down menus will allow you to select either an existing control device or an existing path. Note that you must enter the

controls first, so they will appear in the corresponding menu. You must build smaller (children) paths first, before building larger (parent) paths that contain children paths.

Figure 4-23. Control Paths Page

My Facilities > Emissions Reports > 2019 Emissions Report Help

Agency ID:12345678
FACILITY INC
123 Main Street
Whitman, GA 12345
2019 Emissions Report
Agency: GA

Report Summary
Report History
Quality Checks
▼ Facility Inventory
Facility Information
Emissions Units
Release Points
Control Devices
Control Paths ◀

▼ Emissions Inventory
569
▶ F1A
▶ F1B
▶ P101
▶ VP01
▶ VP02
▶ VP02A
▶ VP02B
▶ VP02C
▶ VP02D
▶ VP02E
▶ VP02F
▶ VP04

Report Facility & Emissions Information Perform Quality Checks Submit to SLT Authority Approved by SLT Authority

Control Paths

Path Id	Path Description	
227		🗑️
228		🗑️
Path 1	Path that contains controls from process A to release points 1 and 2	🗑️ +

Figure 4-24. Adding a New Path

My Facilities > Emissions Reports > 2020 Emissions Report Help

Agency ID:12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345
 2019 Emissions Report
 Agency: GA

Report Summary
 Report History
 Quality Checks
 Data Bulk Entry

▼ Facility Inventory
 Facility Information
 Emissions Units
 Release Points
 Control Devices
 Control Paths

▼ Emissions Inventory
 ▶ F1A
 ▶ F1B
 ▶ PI01
 ▶ VP01
 ▶ VP02
 ▶ VP02A
 ▶ VP02B
 ▶ VP02C
 ▶ VP02D
 ▶ VP02E
 ▶ VP02F
 ▶ VP04

Report Facility & Emissions Information Perform Quality Checks Submit to SLT Authority Approved by SLT Authority

Control Path Information

Path ID: Percent Control Effectiveness:

Path Description:

Cancel Save

Figure 4-25. Example of a Page for a Control Path

My Facilities > Emissions Reports > 2019 Emissions Report Help

Agency ID:12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345
 2019 Emissions Report
 Agency: GA

Report Summary
 Report History
 Quality Checks

▼ Facility Inventory
 Facility Information
 Emissions Units
 Release Points
 Control Devices
 Control Paths

▼ Emissions Inventory
 569
 ▶ F1A
 ▶ F1B
 ▶ PI01
 ▶ VP01
 ▶ VP02
 ▶ VP02A
 ▶ VP02B
 ▶ VP02C
 ▶ VP02D
 ▶ VP02E
 ▶ VP02F
 ▶ VP04

Report Facility & Emissions Information Perform Quality Checks Submit to SLT Authority Approved by SLT Authority

Control Path Information Edit

Path ID: 228
 Path Description:

Control Path Assignment

Sequence Number	Assignment	% Apportionment		
1	7894769	100		
+				

Figure 4-26. Editing a Path

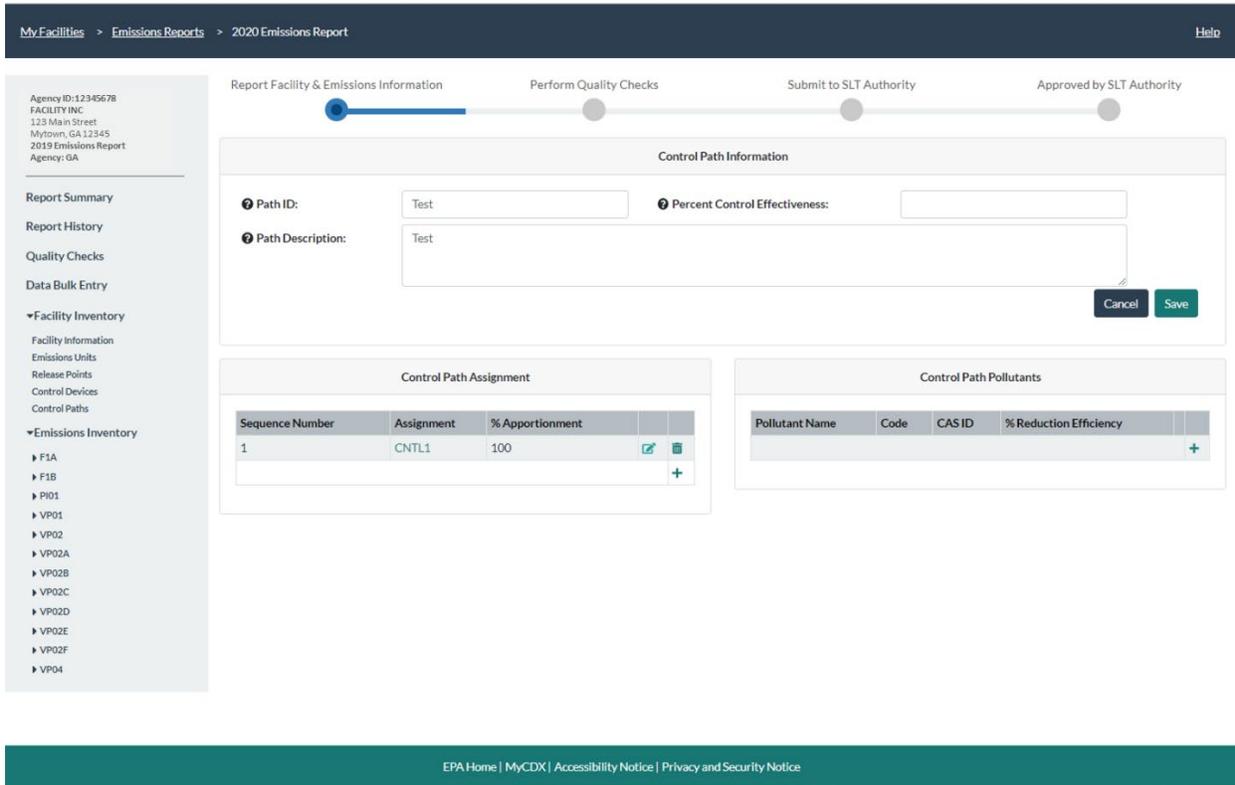
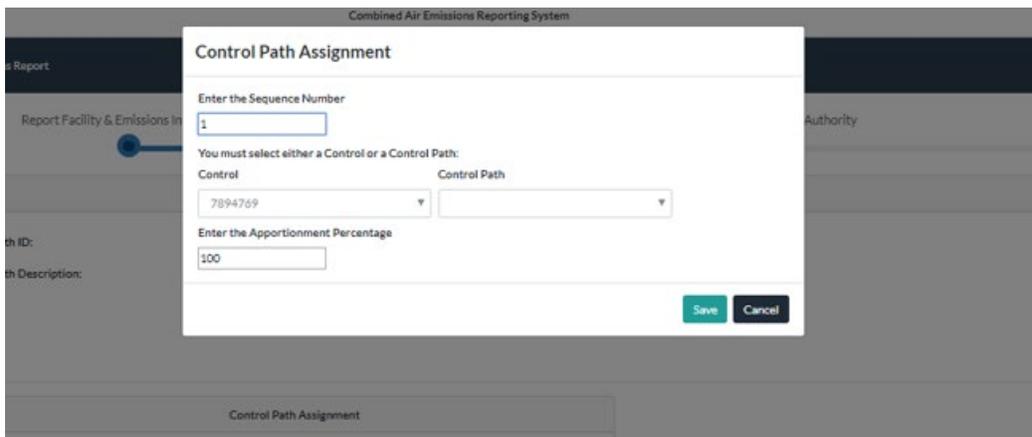


Figure 4-27. Adding a Path Assignment



Enter the control apportionment percentage. For example, if the control device or path you have selected will be first in the sequence and will be receiving 100% of the emissions from the emissions process, you would enter 100. If a control receives all emissions from the previous control device or path in the sequence, enter 100. If the control will be receiving 50% of the emissions from the previous control or path in the sequence, enter 50. Click “Save” to go back to that path’s screen. Your assignment should appear in the list of assignments.

Here is an example of how data would be entered for a facility with complex controls (see the example facility in Appendix A, Figure A. 6). For the example facility, controls are configured as shown in Figure 4-28. Additionally, Control Device 1 sends 60% of its emissions to Path 1 and 40% of its emissions to Control Device 3. Controls 2 and 4 are configured in sequence, and would be added to Path 1 from Path 1’s screen as shown in Table 4-1. In Path 2, Path 1 and Control 3 run in parallel and thus, have the same sequence number. Path 2 would include the following as shown in Table 4-2 where Path 1 and Control 3 have been highlighted.

Figure 4-28. Example of a Facility with Complex Controls

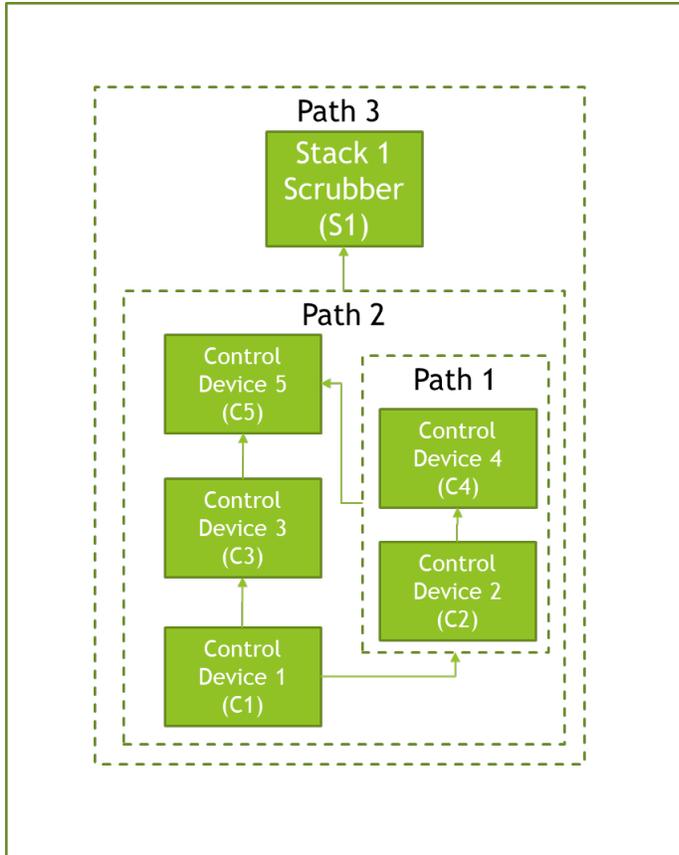


Table 4-1. Example of Data Entry for Controls in Sequence for Path 1

Control or Control Path	Sequence Number	% Apportionment
Control 2	1	100
Control 4	2	100

Table 4-2. Example of Data Entry for an Assignment including a Control and a Path Running in Parallel for Path 2

Control or Control Path	Sequence Number	% Apportionment
Control 1	1	100
Path 1	2	60
Control 3	2	40
Control 5	3	100

- **To associate the control path to one or more processes and release points**, select the relevant unit from the “Emissions Inventory” menu on the left-hand side or from the list in the “Emissions Unit” page under “Facility Inventory”. Then, choose the relevant process for that unit that you want to associate and follow the instructions in Section 4.3.2 on how to associate a release points with processes.
- **Important additional considerations about control paths:**
 - **Relationship between control devices, children, parent, and main path:** It is important to remember that a path can include one or more controls as well as another path. While there may be many “children” paths within “parent” paths, there should be one main path between each process, and the controls between it and its release point(s). As you create paths, keep in mind that while one path may contain other paths, ultimately, you will want to ensure that you’ve created a path that includes all controls leading from any process to a release point. Each relationship between an emissions process and a release point (i.e. the release point apportionment) can only be associated with one control path. All processes from a unit to a release point can share the same path.
 - **Relabeling pitfall:** Please do not relabel current control devices in the bulk upload template with new ID’s. The system will not recognize these controls as existing, effectively adding control to your facility instead of simply replacing the ID’s. If you do, your facility inventory of record with EPA will reflect additional controls and potential emissions that do not really exist in your facility. Your efforts in this regard will help us keep your facility inventory up to date.
 - **Avoid idle paths:** Empty paths add unnecessary data to your report. You are encouraged to create only paths that will actually be used.

4.3 Emissions inventory

The left-hand side menu of the application shows a list of units for the facility under “Emissions Inventory”. You can click on the arrow to the left of the Unit ID to show a list of processes associated with that unit. Click on any one of those units or processes to show the unit’s information.

4.3.1 Units

Click on the unit you are interested in. This will take you to that unit’s information page. Click on the “Edit” button at the top right of the screen to make changes to the emissions unit information. For more information on adding or editing a unit, see Section 4.2.2.

4.3.2 Processes

From the left-hand side menu, click on the relevant unit. Once you are in that unit’s information page, you will be able to add or edit a process.

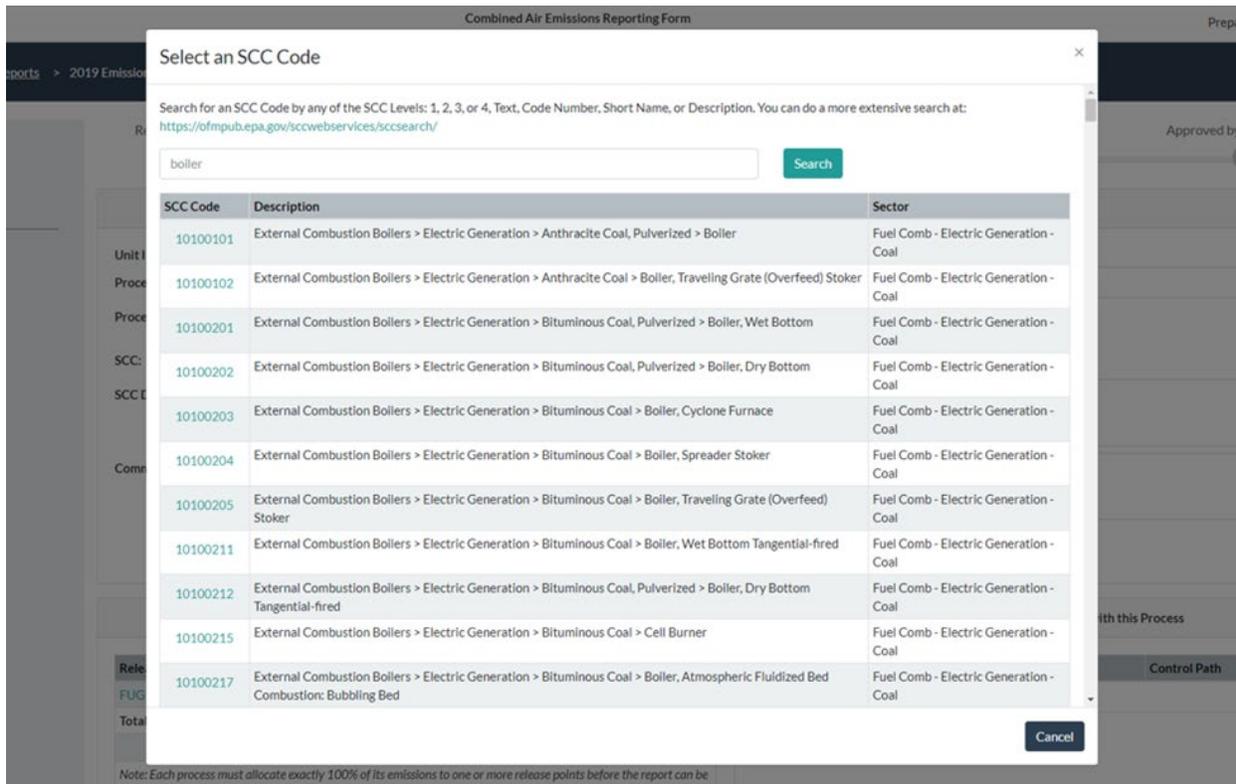
- **To add a process**, click on the “+” at the bottom of the list of processes in the “Processes Associated with this Emissions Unit” box. This will take you to a process page (Figure 4-29) where you can enter all relevant information for that process. Drop-down menus will assist you in selecting some data fields. Error messages will appear for items that have been entered incorrectly or for missing fields that are required.

Figure 4-29. Adding a New Process

Note that your process Source Classification Code (SCC) can be found via search. Click on the “Search for SCC Code” button and enter a search term (for example, boiler). The search will be performed and return a list of options for you to choose from. Click on the SCC you want to use. Note that the SCC Level descriptions for that code will pre-populate in the SCC Description box. You may also enter an SCC if you already know it (for example, 10100201). See Figure 4-30.

The form will crosscheck that the code you are entering is a valid point source code and is a code that has not been retired before the inventory year you are reporting. A warning will be displayed if the selected SCC is being retired the year of your report, or in the future, but you will still be able to use that code. However, if the SCC you select was retired before the year of your report, you will see a critical error. If you want to see a full list of codes or perform different searches, go to <https://epa.gov/scc>.

Figure 4-30. SCC Search



Once you add a process, it will appear in the list of processes associated with that unit on the unit's information page.

- To edit a process**, from the unit's information page, you can also edit a process. Click on the process you want to edit. This will take you to a page with all the information about that process (Figure 4-31). Click on the "Edit" button at the top right of the screen to make changes to the process information (Figure 4-32). You can edit operating details and reporting period information by clicking "Edit" in each of those boxes. Note that this version of CAERS is for annual reporting only. Future versions of the system will offer more reporting periods. Click "Save" when your edits are finished. Click "Cancel" if you find your edits are an error and wish to discard them.
 - Editing throughput:** When throughput for a process is changed, the CAER system will automatically calculate the emissions for all pollutants associated with the process, where this is possible given the calculation method selected for each pollutant. A message in a green box will appear at the top right of the screen indicating that calculations were successful. If a calculation is not possible, an orange or red box will appear with an error message indicating the problem encountered with the calculation.
 - Entering fuel use:** Starting in 2020, fuel use reporting will be required for certain combustion and industrial process SCCs. You will be asked to enter the fuel material, the amount of fuel and heat content, together with units of measure. Note, however, that you will be able to use this fuel use data as your throughput data by selecting: "Copy Fuel Data to Throughput Data Fields". Check that the fuel type and units of measure match the fuel listed in the SCC.

- **Entering alternative throughput:** When using emission factors with different materials and/or units of measure for different pollutants for the same process (SCC), CAERS allows you to enter an alternative throughput. CAERS will create a copy of your original process when you click on the “Add Alternative Throughput for this Process” button at the top of the screen for that process. A pop-up window will appear, asking if you are sure this is what you want to do. If you accept, you will be taken to a new screen where all your process data has been prepopulated for you except for the process ID, throughput data fields, and emissions. From there, you can enter a new ID, your alternative throughput data, and list the pollutants for which you’ll be using this throughput to calculate emissions.

Figure 4-31. Example of a Page for a Process

The screenshot displays the CAERS interface for a process. At the top, a breadcrumb shows 'My Facilities > Emissions Reports > 2020 Emissions Report'. A progress bar indicates the current step is 'Report Facility & Emissions Information'. A sidebar on the left contains navigation options like 'Report Summary', 'Quality Checks', and 'Emissions Inventory'. The main content area is divided into several sections:

- Process Information:** Unit ID: VP01, Process ID: NOX1, Process Description: Low NOx natural gas fired boiler, Process Status: Operating, Process Status Year: 2008, SCC: 10200001, SCC Description: > 100 Million BTU/hr.
- Operating Details:** Avg. Days per Week: 7, Avg. Hours per Day: 8, Avg. Weeks per Year: 52, Hours per Period: 3125, Winter Operating Percent: 25, Spring Operating Percent: 25, Summer Operating Percent: 25, Fall Operating Percent: 25.
- Reporting Period:** Reporting Period: Annual, Throughput Material: Item, Fuel Material: Routine, Throughput Value: 315435, Throughput Parameter: Output, Throughput Unit: MILLION BTUS.
- Emissions Associated with this Process:** A table listing pollutants: Nitrogen Oxides (NOX), Sulfur Dioxide (SO2), and Volatile Organic Compounds (VOC).
- Release Points Associated with this Process:** A table showing release points: SVO3 (Vertical, 100%) and Total % Apportionment of Emissions (100%).
- Controls Associated with this Process:** A table with columns for Control, Description, and Control Path.

Figure 4-32. Editing a Process

Agency ID: 12345678
 FACILITY INC
 123 Main Street
 Mytown, GA 12345
 2019 Emissions Report
 Agency: GA

Report Facility & Emissions Information | Perform Quality Checks | Submit to SLT Authority | Approved by SLT Authority

Process Information

Unit ID: VP01

Process ID: NOX1

Process Description: Low NOx natural gas fired boiler

Process Status: Operating

Process Status Year: 2008

SCC: 10200401

SCC Description: +100 Million BTU/hr

Operating Details

Avg. Days per Week:	7	Hours per Period:	3125	Summer Operating Percent:	25
Avg. Hours per Day:	8	Winter Operating Percent:	25	Fall Operating Percent:	25
Avg. Weeks per Year:	52	Spring Operating Percent:	25		

Reporting Period

Reporting Period:	Annual	Operating Type:	Routine	Throughput Parameter:	Output
Throughput Material:	Item	Throughput Value:	315435	Throughput UoM:	MILLION BTUS
Fuel Material:		Fuel Value:		Fuel UoM:	
		Heat Content Value:		Heat Content UoM:	

Emissions Associated with this Process

Pollutant Name	Code	CAS ID
Nitrogen Oxides	NOX	
Sulfur Dioxide	SO2	9-5-7446
Volatile Organic Compounds	VOC	

Release Points Associated with this Process

Release Point	Release Type	Control Path	%
SVO3	Vertical		100%
Total % Apportionment of Emissions			100%

- **To delete a process**, from a unit’s page, you should only delete a process using the garbage can icon if you added it to this year’s report and that addition was an error. If the process existed in a previous year’s report, and is no longer in use, you can click on its ID and change its status from “Operating” to “Permanently Shutdown”. Once you have done so, the data on the operating details and reporting period for that process will be hidden from view. However, the “Release Point Apportionment” and “Controls Associated with this Process” will remain.
- **Other items in the process page:** In this page you will also see pollutants, release points, and controls associated with the process.
 - **To add a release point to a process**, see Section 4.3.2.1. Associated control paths and controls will appear once the process has been associated to the release point as described in Section 4.3.2.1.
 - **To add pollutants to a process**, see Section 4.3.2.2.
 - **To add controls**, see Section 4.2.4.
- **Important additional considerations about processes:**
 - **New but inactive processes:** As with other sub-facility components, please do not create a new process in your report, and then mark it as temporarily or permanently shut down. If you have a new process that will report emissions in a future year, add it in that future year report.
 - **Relabeling pitfall:** Please do not relabel current processes in the bulk upload template with new ID’s. The system will not recognize these processes as existing, effectively adding processes to your facility instead of simply replacing the ID’s. If you do, your facility inventory of record with EPA will reflect additional processes and potential emissions that do not really exist in your facility. Your efforts in this regard will help us keep your facility inventory up to date.

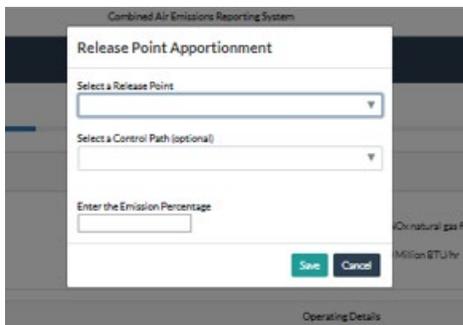
- **Caution with processes for alternative throughput:** When using the alternative throughput option, the system will recognize that the new throughput is in a copy of an existing process. Be careful not to alter the process copy, or the system may interpret it as a different process and flag it for any relevant errors. Additionally, if the copy process is altered, and it is for an SCC where fuel is required, the system will require you to enter fuel use for that process again, and fuel use will be double counted. Similarly, a process copy should only list the pollutants that are using the alternative throughput, otherwise, emission from pollutants may be compounded.

4.3.2.1 *Associating a Process to a Release Point*

Go to the process information page (Figure 4-31). You can get there by clicking on the corresponding unit from the left-hand side menu, and then clicking on the relevant process ID. First, in the “Release Points Associated with this Process” box, click on the “+” sign to add a release point associated with the current process. A pop-up window will appear requesting information about the release point, and the percentage of the process’ emissions being directed to that release point (Figure 4-33). If there are not controls between the process and a release point, you do not have to enter a control path. You will simply apportion the corresponding emissions to the release point.

If there are controls to associate the control path to one or more processes and release points, you should associate them here. Note that the control and path assignments should have been defined before attempting this step (Sections 4.2.4 and 4.2.5). This will allow you to select from existing release points, and control paths. All emissions from the process must be apportioned to a release point so that 100% of total emissions have been assigned to one or more release points.

Figure 4-33. Release Point Apportionment



After entering the relevant information, click “Save”. Now you will be able to see, in the “Controls Associated with this Process” box at the bottom left of the screen, the path you have associated with the release point and process.

You will not be able to edit the controls associated with the process from this page. If you need to edit the controls and/or paths, you must ensure you have entered the relevant control devices and their paths as in the steps described above, and that you have associated them to the relevant process.

4.3.2.2 *Entering and Calculating Emissions*

In the page for that process, go to the “Emissions Associated with this Process” box in the lower left side of the screen (Figure 4-32). Click the “+” sign to add emissions. This will take you to a new pollutant page (Figure 4-34). In the “Pollutant” data field start typing in the name, code, or CAS number. The form will assist in finding the name of the pollutant. Once you have found the pollutant you are

looking for, select it. The form will then prepopulate the other pollutant data fields: Pollutant Code, Pollutant Name, and CAS ID if it exists. For example, typing in sulfur will render Sulfur Hexafluoride – SF6, and Sulfur Dioxide – SO2-9-5-7446. Note that some pollutants, such as Volatile Organic Compounds (VOC) do not have a CAS number because they are groups of pollutants, as opposed to single pollutants. You will still be able to select such pollutants even if the CAS number field appears blank.

EPA augments triannual reports to reflect Hazardous Air Pollutants (HAPs). Alternatively, if you wish to reflect your own HAP calculations instead of EPA's, you will be able to do so by entering your own HAP data when entering pollutant emissions (see Section 4.3.2.2). You are encouraged to provide HAP information even if your SLT does not require it, so that you avoid EPA having to estimate that information, which may not be as accurate as your own information.

Figure 4-34. Adding a New Pollutant

Next, select calculation method from the drop-down menu (Figure 4-35). The form will require the user to enter specific data fields according to the calculation method selected.

- **Using emission factors:** If you have selected a USEPA Emission Factor, the form will allow you to search for an emission factor by clicking on the corresponding box under the calculation method.

Figure 4-35. Selecting a Calculation Method

The screenshot shows a web form titled "Emission Information". It contains several input fields and a large dropdown menu. The "Pollutant" field is set to "Nitrogen Oxides - NOX", and the "Pollutant Code" is "NOX". The "Pollutant Name" is "Nitrogen Oxides" and the "CAS ID" is empty. The "Calculation Method" dropdown menu is open, showing a list of options including "USEPA Emission Factor (pre-control) plus Control Efficiency", "Continuous Emission Monitoring System", "Emission Factor based on data available peer reviewed literature", "Emission Factor based on Fire Emission Production Simulator (FEPS)", "Emission Factor based on Regional Testing Program", "Engineering Judgment", "Manufacturer Specification", "Material Balance", "Other Emission Factor (no Control Efficiency used)", "Other Emission Factor (pre-control) plus Control Efficiency", "S/L/T Emission Factor (no Control Efficiency used)", "S/L/T Emission Factor (pre-control) plus Control Efficiency", "S/L/T Specification Profile", "Site-Specific Emission Factor (no Control Efficiency used)", "Site-Specific Emission Factor (pre-control) plus Control Efficiency", "Stack Test (no Control Efficiency used)", "Stack Test (pre-control) plus Control Efficiency", "Trade Group Emission Factor (no Control Efficiency used)", "Trade Group Emission Factor (pre-control) plus Control Efficiency", "USEPA Emission Factor (no Control Efficiency used)", and "USEPA Emission Factor (pre-control) plus Control Efficiency". The "USEPA Emission Factor (pre-control) plus Control Efficiency" option is highlighted in blue. At the bottom right of the form, there are three buttons: "Calculate Emissions", "Cancel", and "Save".

- **Formulas:** Note that some factor searches will return formulas. The form will require the user to then supply additional parameters for that formula. For example, sulfur content %. If the emission factor units of measure (UoM) is different from the throughput UoM's, the form will return an error. However, the form will perform a simple conversion for units of the same kind (for example, weight UoM conversions from lbs to tons). See Appendix B for more information on conversions in CAERS. After entering all required fields, click on "Calculate Emissions" and the form will calculate the emissions for you. A green confirmation message at the top right of your screen will appear to indicate the calculations have been performed. Click "Save" to be taken back to the emission unit information page.
- **EPA Factors requiring additional explanation:** If you have selected an EPA emission factor because one exists but its use is not straightforward you can check the box "I prefer to calculate the total emissions of this pollutant" located under the Emissions UoM box, and the calculator will disengage. If you disengage the calculator, you must enter a description of your calculation process in "Description of Calculation" box and an attachment is required to justify the use of an alternative emission factor or total emissions you calculated (Figure 4-36). Your SLT may require, specifically, that your attachment be an excel file showing all the data used in your calculations so that the SLT staff person can replicate your estimates. If you do not provide all the relevant information, your SLT may return your report to you. EPA factors that may fall under this category include, for example: factors for retired SCCs being used for a new map to SCC, factors within range where the factor is listed as being a mid-range value, or as being expected to be lower than the value listed, factors not available through the CAERS search feature but that exist in AP42 (consult WebFIRE and make sure that those factors have not been either revoked, or marked as lower quality).
- **Controls:** If controls are present (associated with this process via a path), enter the overall control efficiency for the path in the "Overall Control %" box. For a single control this is equal to the multiplication of: (percent capture) x (percent effectiveness) x (percent efficiency). For more than one control (including control paths) it is the total percent of the pollutant that is removed by the controls (or control paths). You should reach out to your SLT if you have questions about how to

calculate this value for your specific controls configuration. For a numerical example on controls, see Section 11.7.8.

Figure 4-36. Using EPA Emission Factor Alternative

The screenshot displays the 'Emission Information' section of the EPA CAERS system. The interface includes a navigation menu on the left with options like 'Agency Information', 'Report Summary', 'Report History', 'Quality Checks', 'Facility Inventory', 'Facility Information', 'Emission Units', 'Release Points', 'Control Devices', 'Control Paths', and 'Emissions Inventory'. The main form area is divided into sections: 'Process Information' (Unit ID: VPO1, Process ID: NOX1, Reporting Period: Annual, Calculation Material: Item, Calculation Parameter: Output, Operating Status: Operating, Calculation UoM: MILLION BTUS), 'Emission Information' (Pollutant: Nitrogen Oxides - NOX, Pollutant Code: NOX, Pollutant Name: Nitrogen Oxides, CAS ID: [blank], Calculation Method: USEPA Emission Factor (pre-control) plus Control Efficiency, Emission Factor: [blank], Emission Factor Description: [blank], Emission Factor Numerator UoM: [blank], Emission Factor Denominator UoM: [blank], Overall Control %: [blank], Total Emissions: 16.996, Emissions UoM: TON), and 'Description of Calculation' (circled in red). A checkbox labeled 'I prefer to calculate the total emissions of this pollutant' is also circled in red. The 'Comments' field contains a note about the 2014 EIS update.

For any estimation method that does not involve an emission factor and thus, does not occupy the CAERS calculator, you will be required to enter a comment and provide an attachment. Only one attachment is required for your entire report, but it should contain an explanation of each of the situations where a factor was not used. Check with your SLT staff to ensure you provide them with the information they require before creating the attachment and submitting it with your report, and in the correct format they require.

- **Important additional considerations about emissions estimates:**
 - **Emission factor and SCC updates:** SCCs and their emission factors are periodically reviewed and updated with some being retired, others being corrected, and new ones being listed. At this time the system does not recognize whether a factor has been revoked or updated. Therefore, you should ensure that your factors remain the same as your previous year report, and recalculate emissions where appropriate, before submitting your report. you should verify your previous year factors by conducting a search within CAERS for new/updated factors before checking the “I prefer to calculate...” box.
- **Rounding issues:** Note that your previous system or data entry method may have rounded the emission factor and/or emissions totals. In that case, re-select or re-enter the rounded values to eliminate rounding.

5 Reporting Emissions and Facility Information Using Bulk Upload

5.1 The Bulk Upload Excel Template

If you will have relatively few changes between your previous year report and your current year report, we encourage you to use the user interface instead of bulk upload because this may be more time saving for you. If you chose bulk upload, you will be able to use it to upload all your data into the system. There is a special template for bulk upload in Excel format. You should use extreme care when

entering data into the spreadsheet making sure you have not created an error in the template inadvertently. You should familiarize yourself with this section of the instructions before attempting to use the bulk upload feature. Also, tips and tools for data entry that have been explained in the User Interface portion of this guide (Section 4) will be helpful.

Facilities that have reported in previous years can download an excel template, which contains their previous year report pre-populated with your previous year annual emissions (National Emissions Inventory) report. We strongly recommend that you make a copy of that pre-loaded template and work with the copy, in case you need to revert to the original. You can obtain this pre-loaded template by clicking on “Download as Template” from the Emissions Reports page (Figure 4-1).

When you open your file, if a yellow bar appears at the top asking if you want to enable content or allow edits, click on the button provided to enable content or edits. Once you have your Excel file template open, you should enter your edits into this file, to reflect the current year submission data.

The template contains several tabs (Figure 5-1). The first tab in the excel file is an “Information” tab. This worksheet shows the version of your template, the date the version of the template was updated, some general instructions, as well as a list of recent changes from a previous version. You should make sure that you download your previous year data in the most recent version of the workbook available in CAERS. Using a workbook from a previous year report, for example, will cause errors in upload, further QA checks, and a potential rejection due to an incomplete submission further down the process.

In general, the template contains two sets of tabs:

Reference tabs are highlighted in gray. These are an Information tab, Worksheet Map and lists of codes for entry of different data fields. Please do not attempt to edit these lists as they are part of the data validation for the data entry tabs. The list of tabs is as follows:

- Information Tab
- Worksheet Map (containing JSON Keys)
- Aircraft Engine Type Code (for airport SCCs only)
- Calculation Material Code
- Calculation Method Code
- Calculation Parameter Type Code
- Contact Type Code
- Control Measure Code
- Emission Factor Code
- Emission Formula Variable Code
- Emissions Operating Type Code
- Facility Category Code
- Facility Source Type Code
- FIPS County Code
- FIPS State Code
- HAP Facility Category Code
- NAICS Code
- Operating Status Code
- Pollutant
- Program System Code

- Release Point Type Code
- Reporting Period Type Code
- Source Classification Code
- Tribal Code
- Unit of Measure Code
- Unit Type Code

Data entry tabs are highlighted in blue. Each tab contains specific types of data to be submitted. Drop-down menus help you avoid errors when entering codes, by displaying the allowed choices. The data entry tabs are:

- Facility
- Facility Contacts
- NAICS
- Release Points
- Emission Units
- Emission Processes
- Controls
- Control Paths
- Control Assignments
- Control Pollutants
- Apportionment
- Reporting Period
- Operating Details
- Emissions
- Emission Formula Variables

The blue data entry worksheets have the same entities that are presented in the web application, for example: facility level data, release points, and emissions units. There are several fields that are required in the spreadsheet so that it can be used in CAERS successfully. These fields are denoted by an asterisk in the column header (row 10). Be sure to enter values or select an option from the dropdown menu in each of the required fields.

There are also relationships among some of the blue data entry worksheets. For example, the “Emission Processes” worksheet will ask for the corresponding Unit ID for each process row. The options in the “Unit ID” dropdown menu on the “Emission Processes” worksheet are based on the units that are available on the “Emission Units” worksheet. As new units are added on the “Emission Units” worksheet, they will be automatically added to the “Unit ID” dropdown menu on the “Emission Processes” worksheet. Therefore, you need to enter your emission units before they are available in the “Emission Processes” worksheet. Other instances where fields are dependent on other worksheets include:

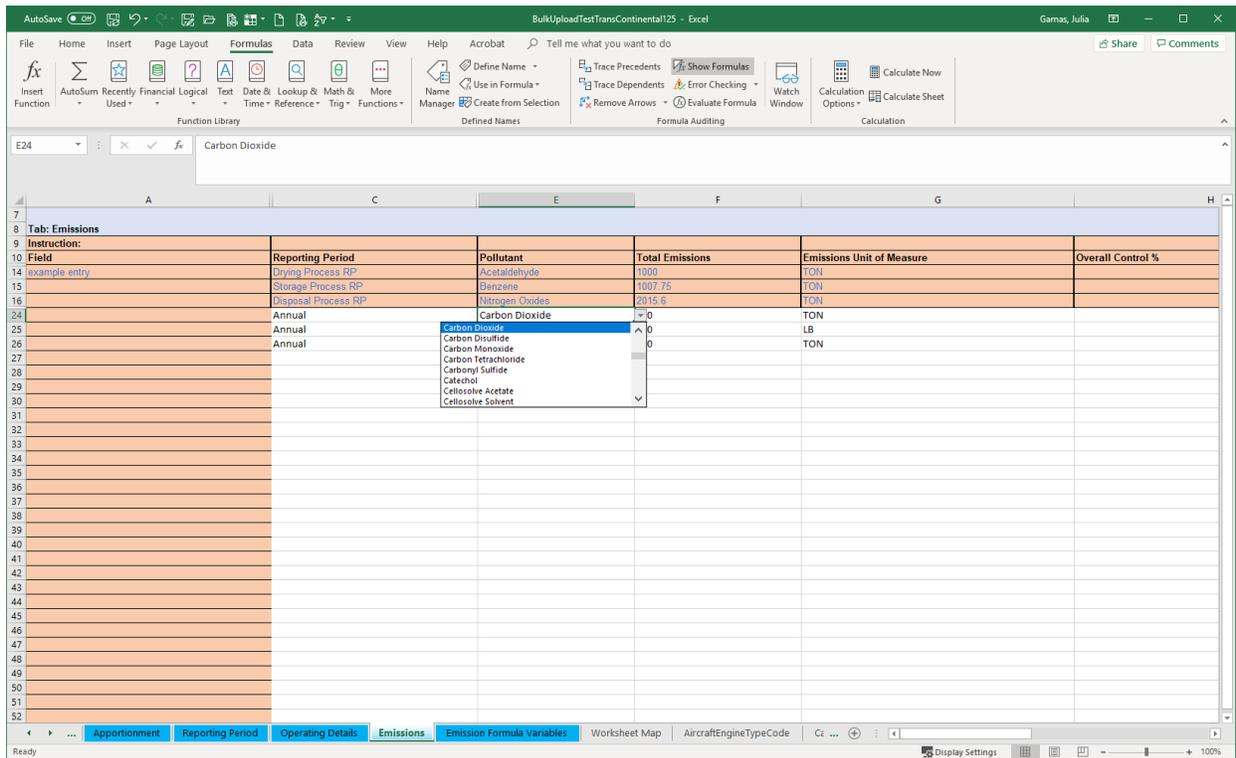
- “Control Assignments” worksheet:
 - Path ID relies on entries from the “Control Paths” worksheet,
 - Control ID relies on entries from the “Controls” worksheet,
 - Control Path (Child) relies on entries from the “Control Paths” worksheet
- “Control Pollutants” worksheet: Control ID relies on entries from the “Controls” worksheet

- “Apportionment” worksheet:
 - Release Point ID relies on entries from the “Release Points” worksheet,
 - Process ID relies on entries from the “Emission Processes” worksheet,
 - Control Path ID relies on entries from the “Control Paths” worksheet
- “Reporting Period” worksheet: Process ID relies on entries from the “Emission Processes” worksheet
- “Operating Details” worksheet: Reporting Period relies on entries from the “Reporting Periods” worksheet
- “Emissions” worksheet: Reporting Period relies on entries from the “Reporting Periods” worksheet;
- “Emission Formula Variables” worksheet: Reporting Period Name relies on entries from the “Emissions” worksheet

There is special formatting in the bulk upload template, such as hidden fields and formulas. Ensure that you are keeping with the correct format for each data field and are using the codes as indicated by the drop-down menus. Many fields that are required by CAERS are hidden from view in the spreadsheet to help avoid uploading mismatched data, for example associating an emissions process to the wrong emissions unit. Use caution when performing certain actions within the bulk upload spreadsheet. Here are examples of potential risks:

- **Overriding formulas:** Within Excel, if you copy several horizontally adjacent cells of data and paste them into the CAERS Bulk Upload spreadsheet then you risk overwriting a necessary formula in a hidden field. However, you can safely copy and paste data vertically within a column.
- **Overriding drop-down menu values:** Pasting data into a field which has a drop-down menu will allow you to enter any data; however, if the value does not precisely match one of the values in the drop-down menu then the upload will return an error.
- **Deleting drop-down menu:** Deleting a cell that has a drop-down menu can potentially delete the drop-down menu completely. While deleting the entire cell will cause a problem, deleting the content of the cell is not a problem. For example, if cell E24 has a value of “CAP” then you can delete “CAP” but should not delete cell E24.
- **Overlooking changes to other worksheets:** when an error is fixed in a parent cell, connected cells do not refresh automatically. Be sure to update the connected cells even if the change doesn’t alter the connected cells. For example, when you enter a Unit ID on the “Emission Units” tab, that value will be available as an option in the Unit ID dropdown menu on the “Emission Processes” tab. If you navigate back to the “Emission Units” tab and change a Unit ID then you will need to manually update all of the rows on the “Emission Processes” tab that have the unit chosen. There may be a cascading effect with this example if the process has already been chosen from the Process ID dropdown menu on the “Apportionment” tab. In this scenario, you would need to update the Unit ID on the “Emission Units” tab, reselect the unit from the Unit ID dropdown on the “Emission Processes” tab, and reselect the Process ID on the “Apportionment” tab.

Figure 5-1. Example of Bulk Upload Template Worksheet



5.2 Bulk Upload Steps

Once your data is ready in the bulk upload template, from the "Emissions Reports" screen (Figure 4-2) click on "Upload Report". Click on the "Browse" button to find the location of your bulk upload workbook on your computer. Once you have found the workbook, select it and the file name will now appear on your screen. Click the "Upload" button. A pop-up window will appear to show that the workbook is being uploaded. The speed at which this happens will depend on your internet connectivity speed. The upload may take several minutes depending on the size of the file.

It is good practice to give yourself extra time to address any errors that may emerge when using bulk upload. CAERS will run validation checks on your Excel file before allowing you to submit it, such as verifying that the required fields are present and that text fields do not exceed maximum lengths. These validation checks will be different than the QA checks that will be run on the data contents in addition, once it has been uploaded. Validation checks are run for the data file structure and format, whereas QA checks are run on the data contained in the file.

If the uploaded spreadsheet has errors that keep it from uploading to CAERS successfully then you will see a list of "Data Errors" on the screen. Each error will indicate the worksheet and row in error, as well as a brief message describing the error. After all the errors have been resolved, you can attempt to upload the file again. If there are not any errors in the uploaded spreadsheet then you will be brought directly to the "Report Summary" for the uploaded report. At this stage you can navigate the CAER System as described in Section 4.

5.3 JSON

If you would like to upload your file in JavaScript Object Notation (JSON), send an email to caer@epa.gov with subject line “CAERS JSON Upload”. We are building this feature and would like to work with you to develop this feature of CAERS.

6 Reporting Emissions Using Bulk Entry

If there are few to no changes in the facility inventory data, the reporter may benefit from bulk entry. Note that to use bulk entry, facility data will have to be present in the system beforehand. If you need to add a unit, process, release point, or controls information, refer to the sections in this guide for reporting through the user interface. If you have many changes, you may prefer to use the bulk upload capability. Also note, that if emission factors changed, you should re-select the emission factors from the emissions calculation page to allow CAERS to update it. Then you can proceed to your bulk entry.

To start entering data via bulk entry, click on “Bulk Entry” from the left-hand side menu. There are two tabs to work on for bulk entry. The first one is for “Process Information”. Here, you should enter the throughput value information that has changed since your previous year report. Click on the “Save and Update” button at the bottom right of the tab to save your changes. See Figure 6-1.

Note that this is the only information that can be edited from this screen. If there are changes to throughput material, or units of measure of throughput, those changes have to be made in the page for the relevant process. You can access that process page by clicking on the process ID. This will re-direct you to the process page. Once you have made the edits there, you can return to the bulk entry screen and continue with your report.

Figure 6-1. Bulk Entry Process Information Tab

The screenshot shows the 'Data Bulk Entry' interface. On the left is a navigation menu with options like 'Report Summary', 'Report History', 'Quality Checks', 'Data Bulk Entry', 'Facility Inventory', and 'Emissions Inventory'. The main area is titled 'Data Bulk Entry' and has two tabs: 'Process Information' (selected) and 'Emission Information'. Below the tabs is a table with the following data:

Unit ID	Process ID	Throughput Material	Throughput Value	Previously Reported Throughput Value	% Change in Throughput	
PI01	NOX	Wood Waste	123.56	E3TON	123.56 E3TON	0.000
VP01	NOX1	Item	315435	E6BTU	315435 E6BTU	0.000
VP02	VOC1	Paper	357918	TON	357918 TON	0.000
VP04	PSS	Natural Gas	137771	E6BTU	137771 E6BTU	0.000

A 'Save and Update' button is located at the bottom right of the table area.

The second page for Bulk Entry is the “Emissions Information” tab, which you can click on from the “Process Information” tab after entering your throughput data. Enter the total emissions if they have changed since your previously reported emissions. Click on the “Save and Update” button at the bottom right of the tab to save your changes. Again, in this tab, note that any changes to the calculation method, or units of measure have to be entered in the relevant pollutant page. To go to that page, click on the pollutant and this will re-direct you to the relevant page. See Figure 6-2.

Figure 6-2. Bulk Entry Emissions Information Tab

Unit ID	Process ID	Pollutant	Calculation Method	Emission Factor	Total Emissions	Previously Reported Total Emissions	% Change in Emissions
PI01	NOX	Nitrogen Oxides	Continuous Emission Monitoring System		72.10	72.107 TON	0.000
		Sulfur Dioxide	Continuous Emission Monitoring System		12.78	12.781 TON	0.000
		Volatile Organic Compounds	Stack Test (no Control Efficiency used)		100	5.5151 TON	1713.204
VP01	NOX1	Nitrogen Oxides	Continuous Emission Monitoring System		16.99	16.996 TON	0.000
		Sulfur Dioxide	Continuous Emission Monitoring		0.100	0.1005 TON	0.000

7 Performing Quality Checks

When you have finished entering or uploading your data, the next step is to run the quality checks. Click on “Report Summary” on the left-hand side menu of your screen to go to the Report Summary page. Click on the “Run Quality Checks” button below the “Report Summary” table. This will take you to a “Quality Review” page where you will see two types of errors listed (Figure 7-1):

- **Critical errors** will appear in red. These errors must be addressed for the report to go through.
- **Warnings** will appear in purple. These errors will not prevent you from submitting the report, but they will alert you to potential issues you may want to address before submitting.

Broadly speaking, error messages fit in one of the following categories:

- **Calculation errors** - Data calculated outside the form that doesn’t match up with what the CAERS is calculating, for example:
 - your reported emissions for a process and pollutant are not within 1% (warning) or 5% (critical) of the emissions CAERS is calculating.
- **Inconsistent data entries** - Data entered is not possible given some physical or temporal constraint, for example:
 - 100% of annual emissions for 52 weeks of operation have been entered as occurring during the Winter season;
 - the latitude for a release point has been reported but is too far from the facility (outside of its facility latitude threshold);
 - an emission factor was provided, but its denominator is in different units of measure than throughput, so a simple conversion is not possible; and
 - the reported emissions previous year reported emissions are identical to the previous inventory year reported emissions.

- **Expected information is missing** - Data are expected to be entered, but the data field is empty. This includes data fields that are conditional on the entry of others. Examples include:
 - in the EPA emission factor, the “I prefer to calculate the total emissions of this pollutant” has been checked but the “Description of Calculation” box has not been populated;
 - controls exist that have not been assigned to a path; and
 - if a release point stack diameter is reported, then exit gas flow rate and exit gas velocity should also be reported.
- **Incorrect format** - Data must be entered in a specific format, for example:
 - postal code must be in five-digit or nine-digit format; and
 - value for a year must be four digits.
- **Data is not allowed** – Data entered is not allowed, for example:
 - duplicate ID was entered for the same component (unit, release point, process, or control), but ID’s for sub-facility components must be unique within the facility;
 - units of measure that are not supported are being used; and
 - SCC entered has been retired in a year prior to the inventory year being reported.

In the case of data that are not allowed, some legacy data may have been carried into the CAER System. While the old data will be displayed, the system may require you to update it. For example, in a previous submission you used a unit of measure code “Million BTUS”, but the system now requires you to enter the new code “E6BTU”. Be sure to update the information by selecting a valid code from the drop-down list.

Figure 7-1. Quality Review Page

The screenshot displays the Quality Review interface. At the top, a progress bar indicates the current step is 'Perform Quality Checks'. The main content area is titled 'Quality Review' and lists 14 errors:

1. **Emission Unit: VPO4, Emission Process: PSS, Pollutant: Nitrogen Oxides** - Total emissions cannot be calculated with the given emissions factor because Throughput UoM MILLION BTUS cannot be converted to Emission Factor Denominator UoM MILLION CUBIC FEET. Please adjust Units of Measure or choose the option "I prefer to calculate the total emissions of this pollutant."
2. **Emission Unit: VPO4, Emission Process: PSS, Pollutant: Carbon Monoxide** - Total emissions cannot be calculated with the given emissions factor because Throughput UoM MILLION BTUS cannot be converted to Emission Factor Denominator UoM MILLION CUBIC FEET. Please adjust Units of Measure or choose the option "I prefer to calculate the total emissions of this pollutant."
3. **Emission Unit: VPO4, Emission Process: PSS, Pollutant: Sulfur Dioxide** - Total emissions cannot be calculated with the given emissions factor because Throughput UoM MILLION BTUS cannot be converted to Emission Factor Denominator UoM MILLION CUBIC FEET. Please adjust Units of Measure or choose the option "I prefer to calculate the total emissions of this pollutant."
4. **Emission Unit: VPO4, Emission Process: PSS, Pollutant: Volatile Organic Compounds** - Total emissions cannot be calculated with the given emissions factor because Throughput UoM MILLION BTUS cannot be converted to Emission Factor Denominator UoM MILLION CUBIC FEET. Please adjust Units of Measure or choose the option "I prefer to calculate the total emissions of this pollutant."
5. **Emission Unit: VPO1, Emission Process: NOX1, Pollutant: Volatile Organic Compounds** - Total emissions cannot be calculated with the given emissions factor because Throughput UoM MILLION BTUS cannot be converted to Emission Factor Denominator UoM MILLION CUBIC FEET. Please adjust Units of Measure or choose the option "I prefer to calculate the total emissions of this pollutant."
6. **Emission Unit: VPO1, Emission Process: NOX1** - The total apportionment for all release points associated with this process must equal 100%
7. **Emission Unit: VPO1, Emission Process: NOX1** - The release point SVO3 is reported more than once for the same release point apportionment collection.
8. **Emission Unit: F1A, Emission Process: Made up process** - The total apportionment for all release points associated with this process must equal 100%
9. **Emission Unit: F1A, Emission Process: Made up process** - The emissions process is not associated with a release point. A process must go to at least one release point.
10. **Emissions Unit: F1B** - Emission Unit Design Capacity must be between 0.01 and 100,000,000.
11. **Release Point: SVQ4** - Release Point latitude must be within the 0.0035 tolerance range of Facility latitude coordinate 33.660270.
12. **Release Point: SVQ4** - Release Point longitude must be within the 0.0035 tolerance range of Facility longitude coordinate -83.988890.
13. **Release Point: SVQ1** - Release Point latitude must be within the 0.0035 tolerance range of Facility latitude coordinate 33.660270.
14. **Release Point: SVQ1** - Release Point longitude must be within the 0.0035 tolerance range of Facility longitude coordinate -83.988890.

Note: Example errors here are not comprehensive in this figure.

Click on the name of the error (underlined), to be taken to the screen where the error is occurring (Figure 7-2). You will see a red bar at the top of your screen containing the error to be addressed. Click on the “Edit” button of the relevant box to make your edits, then click “Save”. You can now click on the “x” at the top right of the error message in the red box to remove it from view.

Figure 7-2. Correcting an Error

The screenshot displays a software interface with a progress bar at the top containing four steps: "Report Facility & Emissions Information", "Perform Quality Checks", "Submit to SLT Authority", and "Approved by SLT Authority". The "Perform Quality Checks" step is currently active, indicated by a blue line and a blue dot. Below the progress bar is a red error message box with a close button (X) on the right. The error message reads: "1. Total emissions cannot be calculated with the given emissions factor because Throughput UoM MILLION BTUS cannot be converted to Emission Factor Denominator UoM MILLION CUBIC FEET. Please adjust Units of Measure or choose the option 'I prefer to calculate the total emissions of this pollutant:'".

Below the error message is a "Process Information" table:

Process Information					
Unit ID:	VP04	Reporting Period:	Annual	Operating Status:	Operating
Process ID:	P55	Calculation Value:	137771	Calculation UoM:	MILLION BTUS
Calculation Material:	Natural Gas				
Calculation Parameter:	Input				

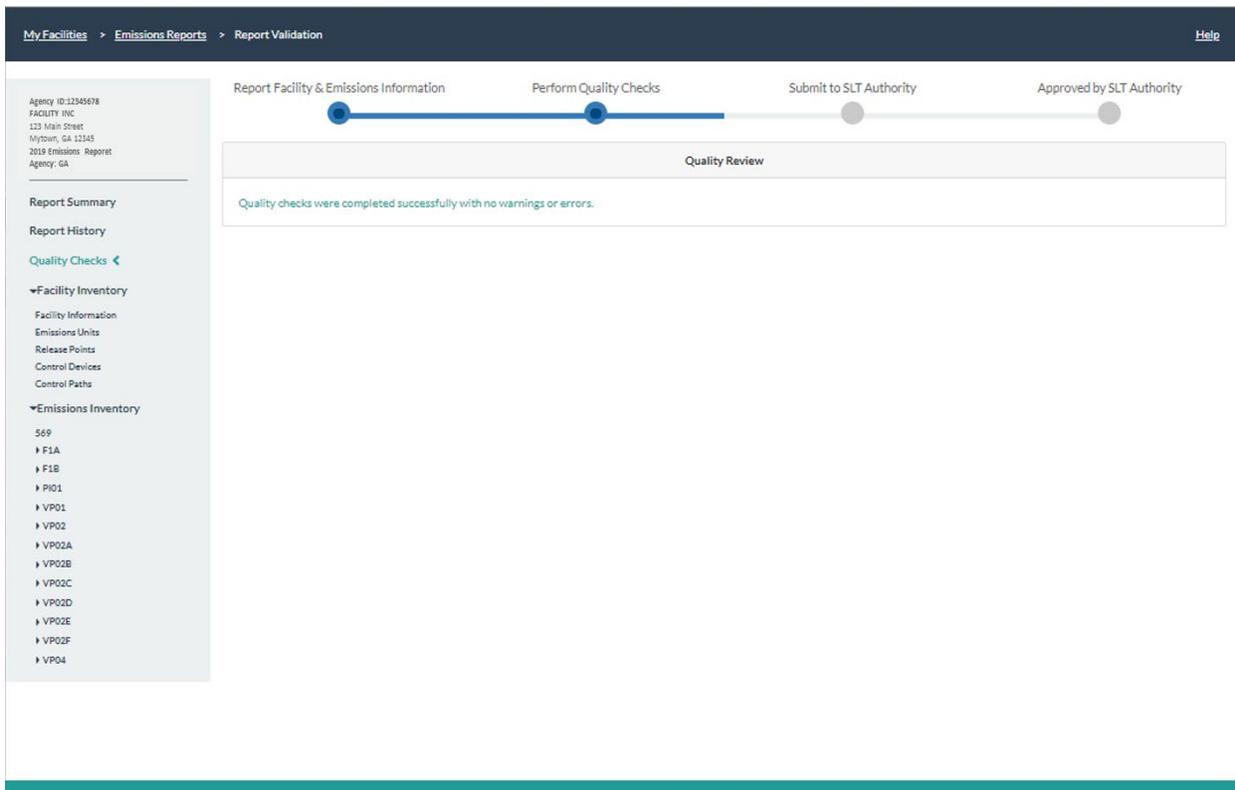
Below the process information is an "Emission Information" form with an "Edit" button in the top right corner. The form contains the following fields:

- Pollutant: Nitrogen Oxides - NOX
- Pollutant Code: NOX
- Pollutant Name: Nitrogen Oxides
- CAS ID: (empty)
- Calculation Method: USEPA Emission Factor (no Control Efficiency used)
- Emission Factor: 100
- Emissions Factor Description: (empty)
- Emission Factor Numerator UoM: LB
- Emission Factor Denominator UoM: E6FT3
- Overall Control %: (empty)
- Total Emissions: 6.75
- Emissions UoM: TON

At the bottom right of the form, there is a checkbox labeled "I prefer to calculate the total emissions of this pollutant" which is currently unchecked.

Click on “Quality Checks” link on the left-hand side of your screen to return to the “Quality Review” page. When you return to the “Quality Review” screen the error will have disappeared. Once you have finished correcting your errors you should re-run the quality checks. Once you have addressed all errors you will see the “Quality Review” screen devoid of error messages (Figure 7-3). Note that warnings may still appear. You will also see the blue line has advanced on the top of your screen to show that the quality checks step has been completed.

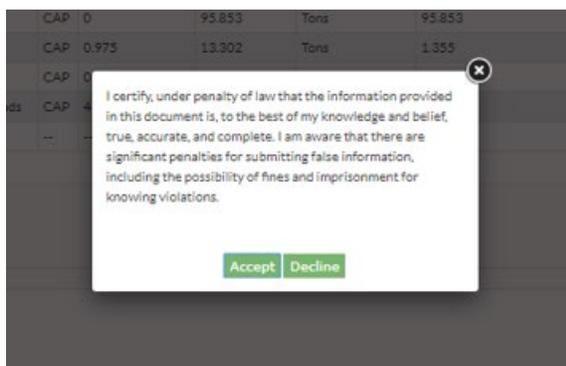
Figure 7-3. Completing Quality Checks



8 Certifying and Submitting to your State, Local, or Tribal Authority

As a certifier, you will log into CAERS and choose the “certifier” role from the “My CDX” page (Figure 3-20). You will see the same screens as the preparer. However, when you are in the “Report Summary” page, you will see an additional button “Certify and Submit to SLT” (SLT stands for State, Tribal, or Local authority). When you are ready to certify that your submission is complete and accurate, click on that button. This will take you to a three-stage (CROMERR) process. First, it will request your password, then it will ask you to answer a security question. Finally, it will ask you to click certify and verify you are submitting correct information (Figure 8-1). You will see a “please wait” sign while you are waiting. Once the submission has been certified, a message will appear in green at the top right of your screen. The progress bar at the top of your screen will have changed and “Submit to SLT Authority” will now be highlighted in blue.

Figure 8-1. Submission Certification



After certifying, your report will be available for you to either reopen or review. We do not recommend reopening your report unless you have an edit, as it will have to be re-certified and re-submitted. You should contact your SLT authority if that is the case, to notify them of any changes you intend to make. You will also want to reopen the report to make corrections, if your submission has been sent back to you.

Once you have submitted your report, you will be able to click the “Report” button to obtain a summary report for your records.

9 Submission Approval

Once the report has been submitted, your SLT Authority will review the report. The person listed under “Emissions Inventory” contact for your facility will be notified of whether the report was approved or rejected. If rejected, comments in the email will explain the issue(s) to be addressed. At that point you should re-open your report and issue the corrections indicated by your SLT Authority. If your preparer or certifier contact person will change at any time after the report was submitted, please let staff at your SLT know so the new contact person can be approved to enter CAERS and issue any corrections as needed.

10 Using Data Reported in CAERS for a TRI-MEweb submission

If you are an NEI-TRI facility reporter, you may start a TRI and NEI reportable chemical Reporting Year (RY) 2020 Form R in TRI-MEweb at anytime before the July 1 TRI reporting deadline. You must have submitted and certified your CAERS data before you start your TRI Form R in the TRI-MEweb application to use the API web service call to populate CAERS data into Section 5.1 and 5.2. You should follow these steps to use data reported to CAERS in TRI-MEweb to save time reporting to both systems.

1. Upon arriving to Section 5 of the RY 2020 TRI Form R, an API call will verify if your EPA Facility Registration ID and CAS number match any data point in the CAERS database. Data in the CAERS database must be certified for it to be used in TRI-MEweb. See Figure 10-1.

Figure 10-1. Example of Section 5 Form R Screen in TRI-MEweb

TRI-MEweb

JSIRESTHA - CERTIFIER - jseesh.shrestha@coj.com (Log out)

My TRI Facility Management - Forms - Submission History Help

Tutorials - Preferences Help Chat

Part I 34: Activities and Uses/Max On-site 5: On-site Releases 6: Off-site Transfers 7: On-site Waste Management 8: Waste Management 9: Misc. Information

On-site Releases and Disposal
Form R, Part II, Section 5 [Need Reporting Help?](#)

RY 2019
TEXPAR BAINBRIDGE TERMINAL - 31717XPRN268IN
1,2,4-Trimethylbenzene...

Hover your cursor over the icon for more information. Enter data using detailed worksheet.

Form Section	<input type="checkbox"/> Not Applicable	Total Quantity (lbs)	Numeric Basis	Basis of Estimate
Air Releases				
Section 5.1: Fugitive or Non-Point Air Emissions	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.2: Stack or Point Air Emissions	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Land Releases				
Section 5.4.1: On-site Underground Injection: Class I Wells	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.4.2: On-site Underground Injection: Class II-V Wells	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.5.1A: On-site Landfills: RCRA Subtitle C	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.5.1B: On-site Landfills: Other	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.5.2: On-site Land Treatment and Application Farming	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.5.3A: On-site Surface Impoundments: RCRA Subtitle C	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.5.3B: On-site Surface Impoundments: Other	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...
Section 5.5.4: Other On-Site Disposal	<input type="checkbox"/>	<input type="text"/> or <input type="text"/> Select a Range Code		Select a Basis of Estim...

A facility that manages waste rock piles may elect to indicate that at least some of the quantities entered above for Section 5.5 were managed in waste rock piles.
 Select the checkbox if you would like to indicate that quantities reported in Section 5.5 were managed in waste rock piles.

Prev (Activities and Uses) Save Next (Water Bodies) Check for Errors

Version: 2019.0.11 EPL Home | MFG/DOE | TRI Program Home | TRI Program Contacts

2. After a few seconds, if there is a match between the TRI-MEweb facility and chemical profile with the CAER database, a green icon titled “NEI data available” will appear (Figure 10-2).
3. As the preparer of the TRI Form R, click on the green button to call the NEI widget to appear on the Section 5 page of TRI-MEweb.

Figure 10-2. Example of "NEI Data Available" Screen

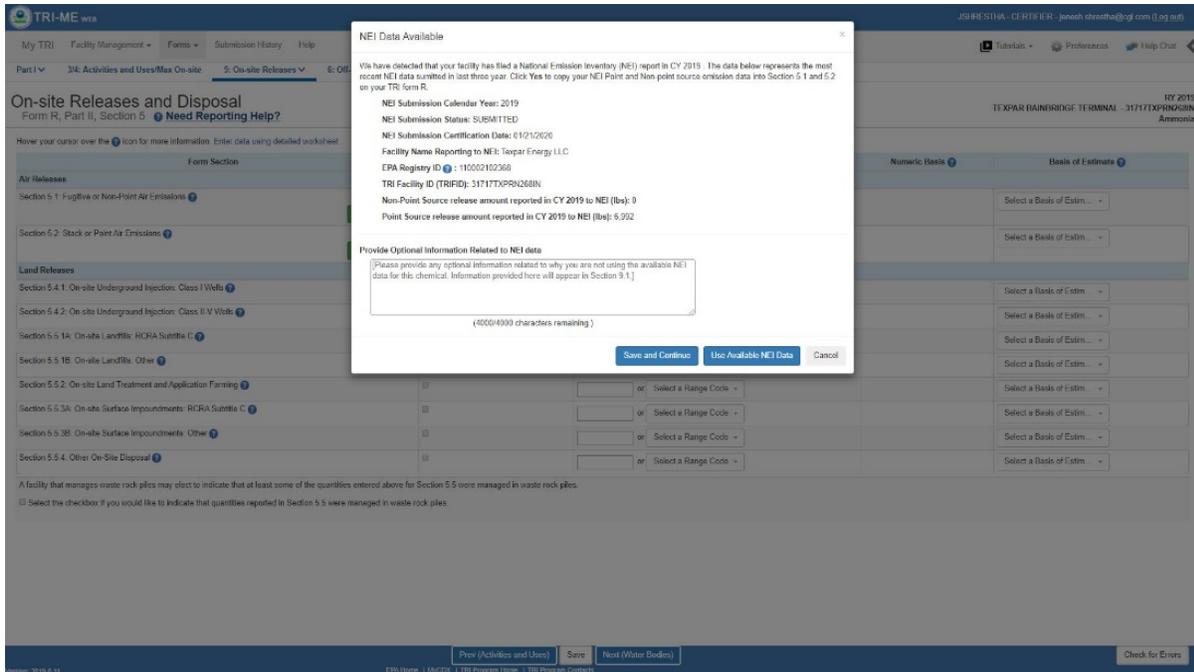
- The following pop-up will appear (Figure 10-3). It contains the most recent active record that is found in the CAERS database: Reporters for large NEI facilities will see the most recent annual submission that is available in the CAER system.

Figure 10-3. Example NEI Data Availability Pop-Up Window

- If you decide, for whatever reason, not to transfer the amount that was shown in the pop-up or the facility information in the pop-up is inaccurate, a comment box will appear so that you can provide a rationale for why the NEI data point was not used (Figure 10-4). This comment will be

collected in Section 9.1 of the TRI Form R. We would like to make the submission process easier for you, and we appreciate knowing how we can improve this process for you.

Figure 10-4. Example Pop-Up Window for Comment



- If you select “Yes, copy my CY [year] NEI emission data into Section 5.1 and 5.2”, the quantities will be copied into the TRI form R. You will then need to complete Form R, validate, and certify to complete their TRI reporting requirement.

11 Where to Go for Help

11.1 Help with the CAERS application itself.

Reach out to the help desk for questions about how to enter data into CAERS:

- By Telephone:** Person-to-person telephone support is available from 8:00 am to 6:00 pm (EST/EDT). Call our toll-free line at 888-890-1995 or our direct line at (970) 494-5500 for International callers.
- By E-mail:** Send e-mail to Technical Support at helpdesk@epacdx.net

This includes the following types of issues:

- Questions about logging into your CDX account
- Unexplained errors while using the application
- How to enter a specific piece of data
- How to navigate from one screen to another

Note that the help desk above is not the right resource for questions about the data itself. Those questions should be referred to your SLT Authority.

11.2 Help with programmatic questions:

Reach out to your SLT for questions related to the content of your submission, such as:

- Critical errors will appear in red. These errors must be addressed for the report to go through.
- Selecting an appropriate SCC and/or emission factor
- Finding out the unit capacity measure of a unit
- The appropriateness of a specific type of conversion for a specific kind of process:

Points of contact from your SLT are:

Georgia Department of Natural Resources (GADNR): Emissions.Inventory@dnr.ga.gov

Lincoln Lancaster, NE County Health Department (LLCHD): Gary Bergstrom,
gbergstrom@lincoln.ne.gov

Pima, AZ Department of Environmental Quality (PDEQ): Janice Easley, Janice.easley@pima.gov

Rhode Island Department of Environmental Management (RIDEM): Alexi.Mangili@dem.ri.gov

Washington, D.C. Department of Energy & Environment (DOEE): air.quality@dc.gov

Please do not contact EPA directly, or EPA contractors for any questions, or this will only delay getting you help further. Please reach out to the CDX help desk (registration, and CAERS application-related) or your SLT first (programmatic). This will ensure the right help gets to you as quickly as possible.

Appendix A Understanding Controls

The U.S. EPA is moving to a new way of representing controls in the National Emissions Inventory (NEI). In this section, we introduce the new concepts regarding controls to help you understand how to set the controls up for your facility in the CAERS.

It is important to capture the overall control reduction percentage for a given Process-Release Point-Pollutant combination, and thus, capture emissions totals correctly.

In the previous control device requirements for the NEI, we were not able to:

- Describe how controls are configured at a facility
- Define the relationship among Controls and Units, Processes, and / or Release Points
- Reuse the Definition a Control in the data, so that the same Control Equipment can be used by many components (Units, Processes, and Release Points)
- Change the values of controls data fields easily

The new way of setting up controls for emissions reporting will include the following features:

- A list of controls can exist for the facility as those controls exist in the real world.
- A control will only define one single piece of control equipment.
- Only the pollutants impacted by this piece of equipment will be listed with the control.
- The percent reduction for the pollutant will be the amount of emissions reduced due to this one piece of equipment.
- The “path” of can be described with the data:
 - In series
 - In parallel

There will be three new items to track in the new controls approach that are worth explaining. A few examples are included to illustrate the application of the concepts:

1. **Control Path:** defined as one or more controls at a facility that are linked. The path will allow the user to define multiple kinds of control setups. A path can consist of controls or other “children” paths. A path cannot refer to itself (or another path that contains it). Ultimately, there should be a “main path” that will define the controls that are encountered from the emissions generation point to the release point. That is, there should ultimately be at least one master path between a unit and a release point. These concepts will become clearer in the examples to follow.
2. **Control Apportionment:** defined as the percentage of the emissions that flows to the next control or path. For example, if emissions coming out of one control flow into one other control in a series, then the control apportionment is 100%. If emissions from one control flow to two or more other controls or paths, then the combined apportionment of those emissions to the other controls or paths must be equal to 100%. For example, 60% of emissions move from control 1 to control 2, and 40% of emissions flow from control 1 to control 3.
3. **Control Assignment:** defines the sequence or order in which controls are configured within a path. The first control in a path would have sequence number 1, the second control would have sequence number 2, and so forth. If there is a path within the path, that path will also have a sequence number.

A. 1 Example of a Facility with No Controls

A facility that has no controls does not need to create any paths. All the user must do is provide a release point apportionment for the process(es) that send emissions to one or more release points. Figure A. 1 shows a graphic example of a facility with no controls. The red arrow represents emissions that ultimately move from the process to the release point: in this case all Process 1 emissions go to Stack 1. Table A. 1 shows how the data would be entered into the CAERS (or the bulk upload template) for the facility absent any controls. In this example, emissions from Process 1 are sent to Stack 1, so Stack 1 is apportioned 100% of Process 1 emissions.

Figure A. 1. Example of a Facility with No Controls

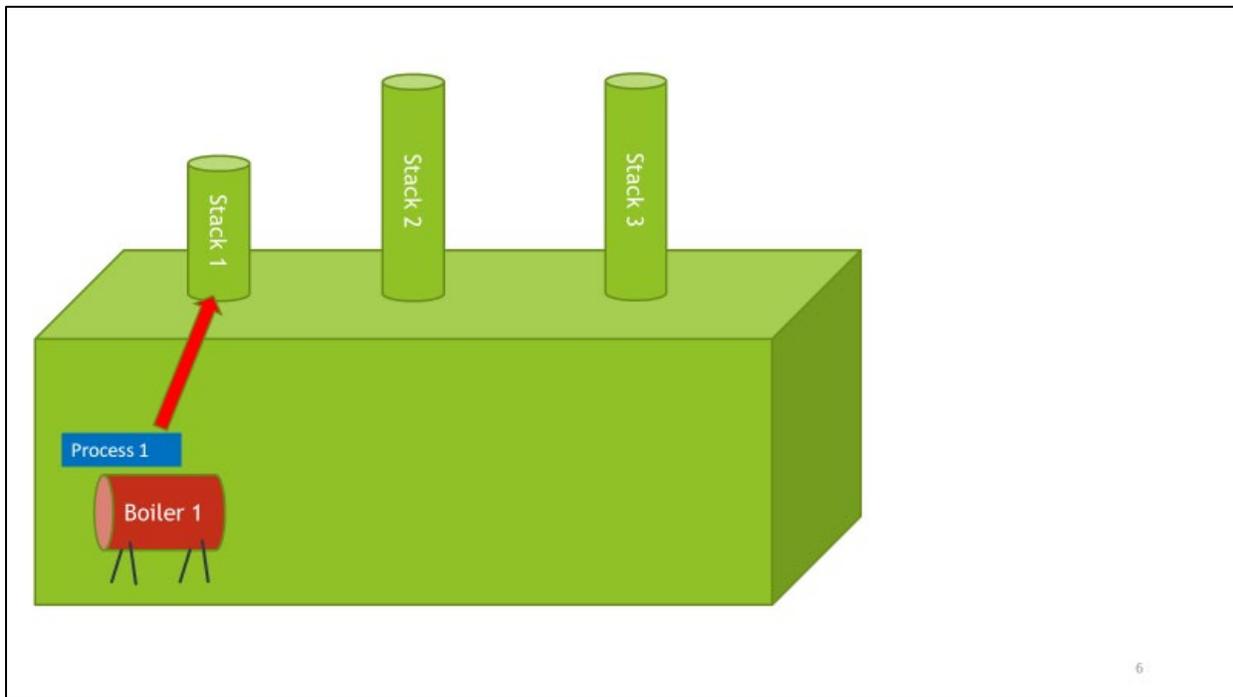


Table A. 1. Example of Associations for a Facility with No Controls

Release Point Apportionment					
Unit ID	Process ID		Path ID	Release Point ID	Release Point Apportionment
Boiler 1	Process 1			Stack 1	100%

If the process emits to more than one release point, then the relevant percentage of emissions ultimately moving from Process 1 to each release point would need apportionment percentages. For example, assume that Process 1 emissions ultimately go to all three stacks with 50% going to Stack 1, 25% of its emissions going to Stack 2 and 25% going to Stack 3. In this case, the release point apportionments would be as shown in Table A. 2.

Table A. 2. Example of Associations with No Controls and Three Release Point Apportionments

Release Point Apportionment					
Unit ID	Process ID		Path ID	Release Point ID	Release Point Apportionment
Boiler 1	Process 1			Stack 1	50%
Boiler 1	Process 1			Stack 2	25%
Boiler 1	Process 1			Stack 3	25%

A. 2 Example of a Facility with a Single Control

Figure A. 2 shows the example of a facility with a single control. The yellow arrow indicates emission moving from the process to the control device. The red arrow shows the emissions moving to the release point. In this scenario, assume there is one process, Process 1. The Control 1 is placed in Path 1. The control apportionment is 100% and the control assignment sequence number is 1. Table A. 3. shows the assignment of the control. Table A. 4 shows the associations for that control and the other relevant sub-facility components.

Figure A. 2. Example of a Facility with a Single Control

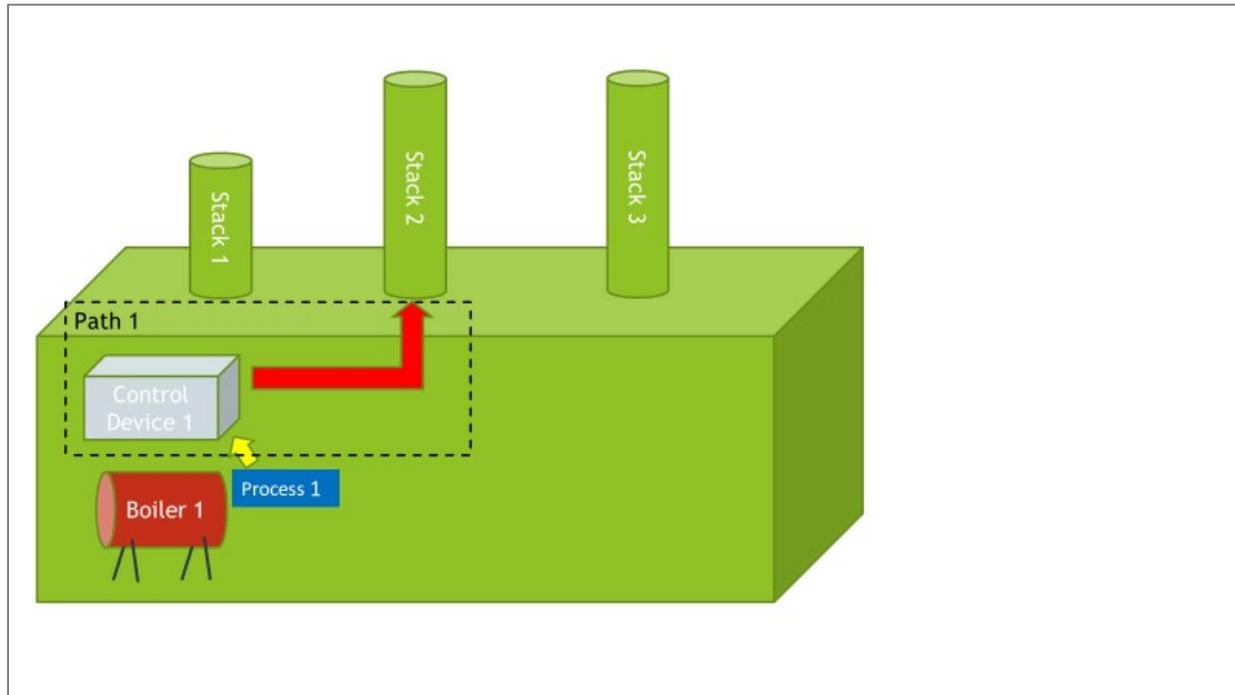


Table A. 3. Example Path for a Facility with a Single Control

Path Data			
Path ID	Sequence Number	Control or Child Path Assignment	Apportionment (for Control or Path)
Path 1	1	Control Device 1	100%

Table A. 4. Example Associations for a Facility with a Single Control

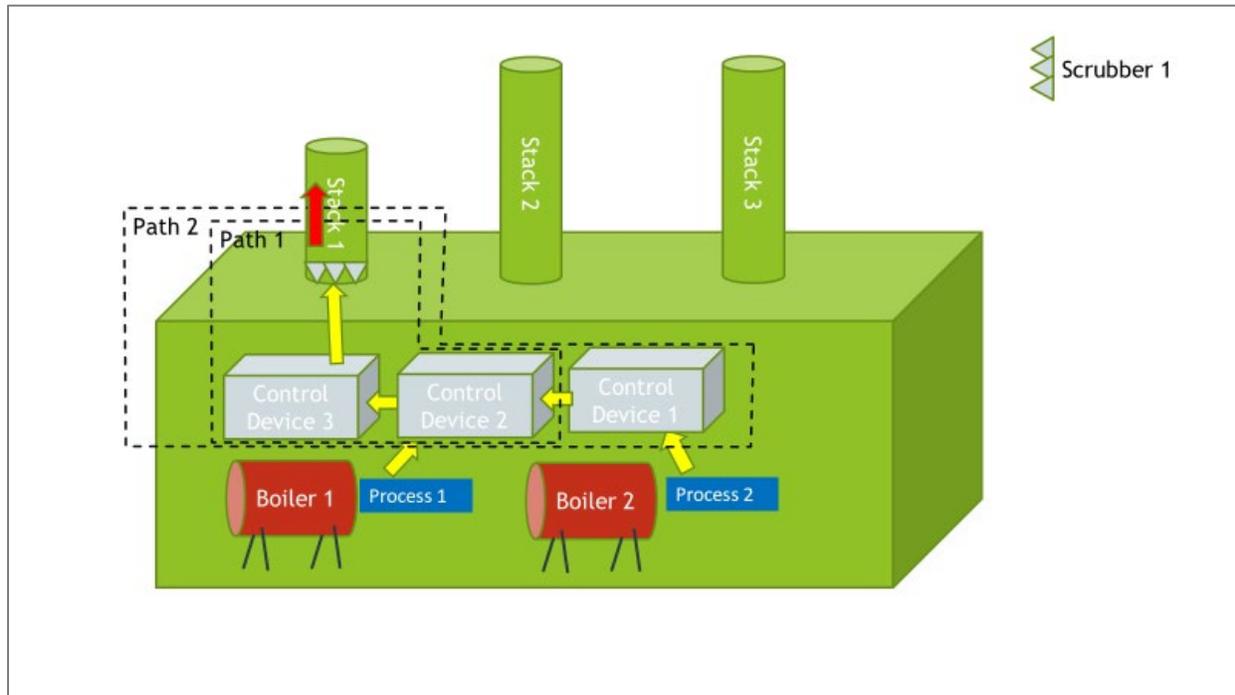
Release Point Data				
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment
Boiler 1	Process 1	Path 1	Stack 2	100%

A. 3 Example of a Facility with Controls in Series

In Figure A. 3 we can see an example of a facility that has controls in series. Assume there is one process per unit, Process 1 and Process 2 for Boiler 1 and Boiler 2 respectively. In this case, there are three controls. Controls 2 and 3 have been placed in Path 1. Path 2 contains Control Device 1 and Path 1. Path 1 is a child path of Path 2.

You should configure your controls into paths is a matter of how your controls are laid out in the facility from the units to the release points. There should ultimately be one master path between a unit and a release point. In this case, that master path is Path 2. If more than one process is being run from the unit, then all the processes would be associated with the control path in the same manner as Process 1.

Figure A. 3. Example of a Facility with Controls in Series



For this example, we can see in Figure A. 4 that the controls are in series. The emissions flow directly from one control to the other. Thus, the control apportionment for Control 1 to Path 1 is 100%, and the control apportionment for each control within Path 1 is 100%. In Path 1, Control 2 is first in the sequence, Control 3 is second. In Path 2, Control 1 is first in the sequence, Path 1 is second in the sequence, and, and Scrubber 1 is third. Table A. 7 shows the assignment for this facility. Table A. 8 shows the associations for the different sub-facility components. Also, note that all emissions enter

Stack 1 after leaving Path 2 (as indicated by the red arrow). Finally, 100% of emissions from Process 1 went to Stack 1, and 100% of emissions from Process 2 also went to Stack 1.

Figure A. 4. Path Assignments for a Facility with Controls in Series

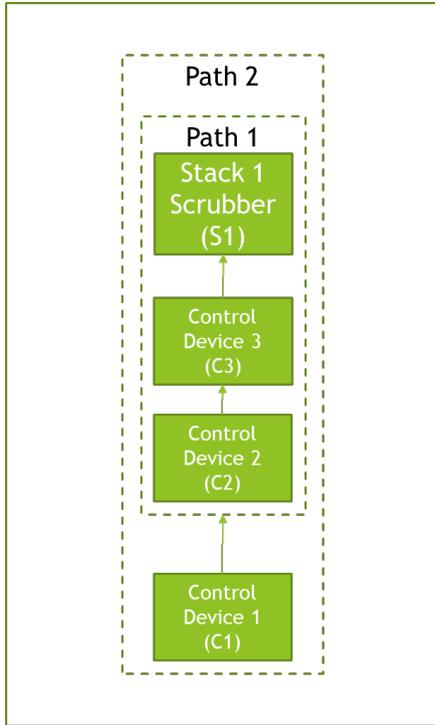


Table A. 5. Example Paths for a Facility with Controls in Series

Path Data			
Path ID	Sequence Number	Control or Child Path Assignment	Apportionment (for Control or Path)
Path 1	1	Control Device 2 (C2)	100%
Path 1	2	Control Device 3 (C3)	100%
Path 1	3	Scrubber 1 (S1)	100%
Path 2	1	Control Device 1 (C1)	100%
Path 2	2	Path 1	100%

Table A. 6. Example Associations for a Facility with Controls in Series

Release Point Data				
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment
Boiler 1	Process 1	Path 1	Stack 1	100%
Boiler 2	Process 2	Path 2	Stack 1	100%

A. 4 Example of a Facility with Complex Controls

Figure A. 5 represents a more complex controls set up. Again, we show just one process for the unit, but all processes associated with that unit (if shown) would be treated in the same way as Process 1. This controls setup is a combination of controls in series and parallel. Path 1 contains Control 2 and Control 4. Path 2 contains Control 1, Control 3, and Path 1 (child path), and Control 5. Path 3 contains Path 2 (child path), and Scrubber 1.

Figure A. 5. Example of Complex Controls

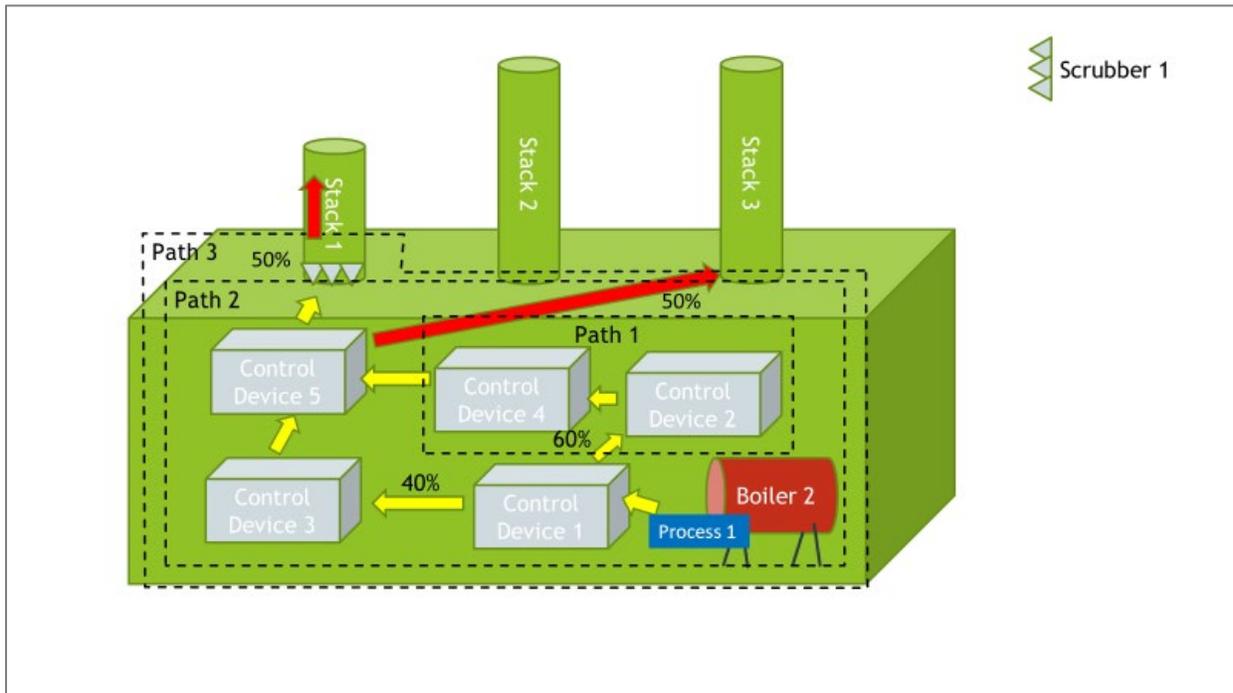


Figure A. 6. shows the different assignments and apportionments given this set up. In Path 1, Control 2 is first in the sequence, Control 4 is second, and 100% of emissions flow from Control 2 to Control 4, and 100% of the emissions flow to Control 5 from Path 1. Path 1 is a child path of Path 2. In Path 2, Control 1 sends 60% of its emissions to Path 1 (where Control 2 is first in the sequence), and 40% of its emissions go on to Control 3. Then 100% of emissions go from Control 3 to Control 5, 100% of emissions exit Path 2 (via Control 5) to Path 3. In Path 3, Path 2 (child path) is first in the sequence, then the Scrubber is second in the sequence. Assignments are shown in Table A. 11. How the different sub-facility components are associated is shown in Table A. 12. Note that 50% of emissions from Process 1 go to Stack 1, and 50% of emissions from Process 1 went to Stack 3 (as indicated by the red arrows in Figure A. 5).

Figure A. 6. Path Assignment for a Facility with a Complex Controls

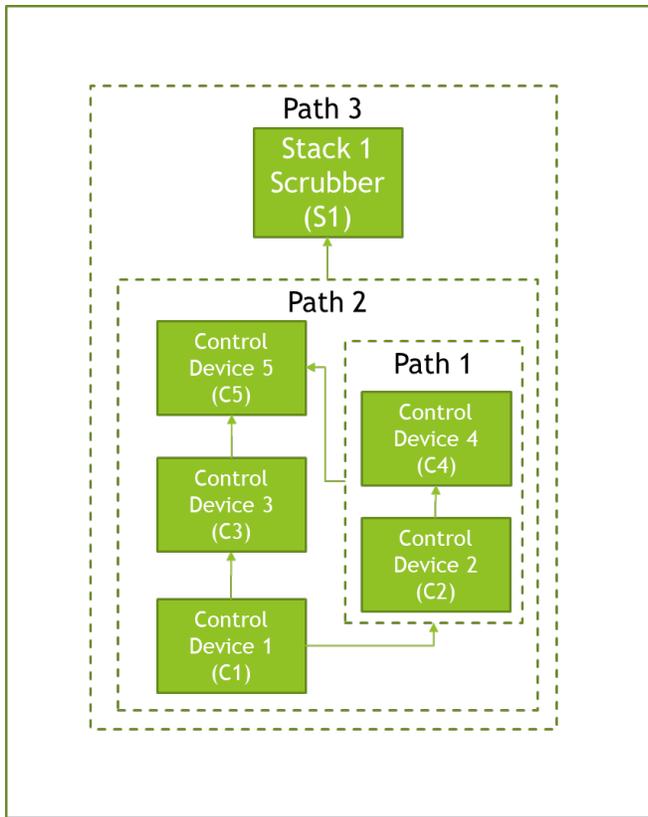


Table A. 7. Example Paths for a Facility with Complex Controls

Path Data			
Path ID	Sequence Number	Control or Child Path Assignment	Apportionment (for Control or Path)
Path 1	1	Control Device 2 (C2)	100%
Path 1	2	Control Device 4 (C4)	100%
Path 2	1	Control Device 1 (C1)	100%
Path 2	2	Control Device 3 (C3)	40%
Path 2	2	Path 1	60%
Path 2	3	Control Device 5 (C5)	100%
Path 3	1	Path 2	100%
Path 3	2	Scrubber 1 (S1)	100%

Table A. 8. Example Associations for a Facility with Complex Controls

Release Point Data				
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment
Boiler 2	Process 1	Path 2	Stack 3	50%
Boiler 2	Process 1	Path 3	Stack 1	50%

A. 5 Additional Examples of Control and Path Assignments

Example 1: Planer Mill Cyclofilter (single control)

Figure A. 7 shows an example of a single control where a Planer Mill Cyclofilter is used. In this case there is only one control and it should be placed in one path. All processes (planer and planer trim block hog) should be associated with that path and the corresponding release point. Table A. 14 and Table A. 15 show path and association data respectively.

Figure A. 7. Planer Mill Cyclofilter Path Assignment

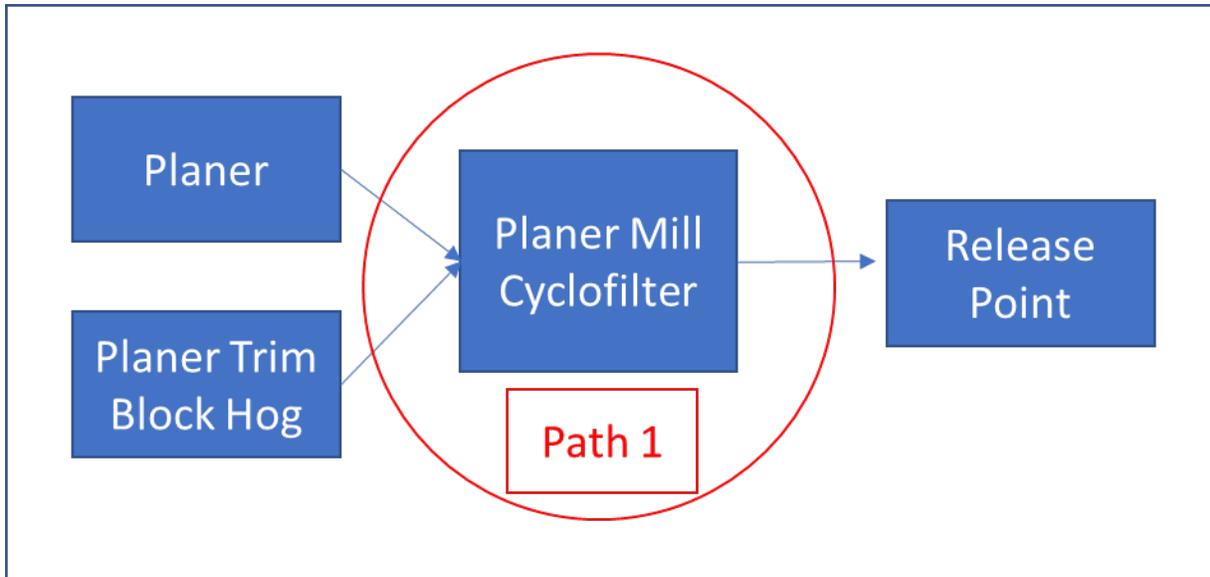


Table A. 9. Path Data for Planer Mill Cyclofilter

Path Data			
Path ID	Sequence Number	Control or Child Path Assignment	Assigned Control or Child Path Apportionment
Path 1	1	Planer Mill Cyclofilter	100%

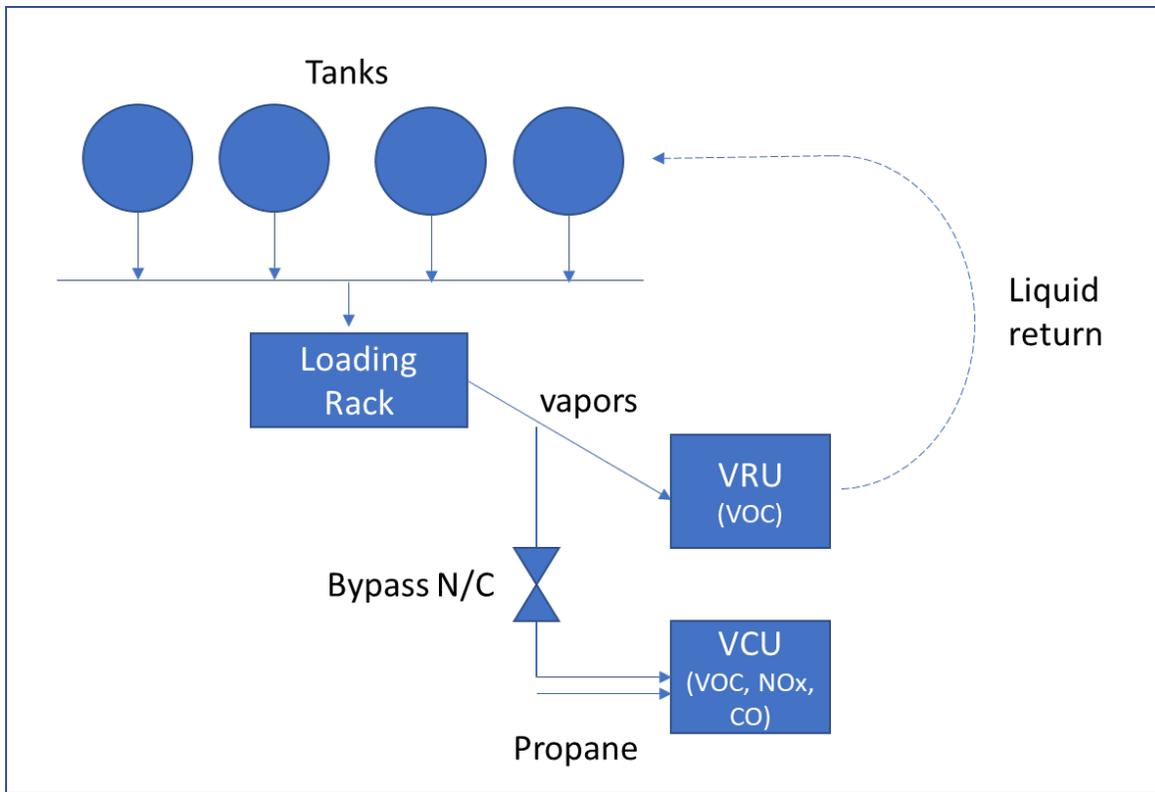
Table A. 10. Release Point Apportionment Data for Planer Mill Cyclofilter

Release Point Data				
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment
Planer	Process 1	Path 1	Stack 1	100%
Planer Trim Block Hog	Process 2	Path 1	Stack 1	100%

Example 2: Controls Working Alternately Example

In this example, emissions go from a loading rack to a vapor combustor unit (VCU) or a vapor recovery unit (VRU), but not to both. There are VOC emissions from the VRU. When the VRU is used, the emissions go to a stack. The VCU works when the VRU is not working. The VCU is a backup to the VRU, and in this example, assume it only works 1% of the time. However, when each one of these controls is working, it takes in 100% of the emissions. When the VCU is operating, the emissions are flared. The VCU uses propane, so its emissions are VOC as well as NOX and CO. See Figure A. 8

Figure A. 8. Example for Controls Working Alternately



In this case, while the vapors could go to either the VRU or the VCU, because of the use of propane in the VCU, we have two different processes with two different SCCs (Figure A. 9). Furthermore, each process is going to a different release point. Specific information about the number of hours each component is working would be entered in with the process information. For example, the number of hours that each is run. Table A. 18 and Table A. 19 show path and association data respectively.

Figure A. 9. Path Assignment for Controls Working Alternately

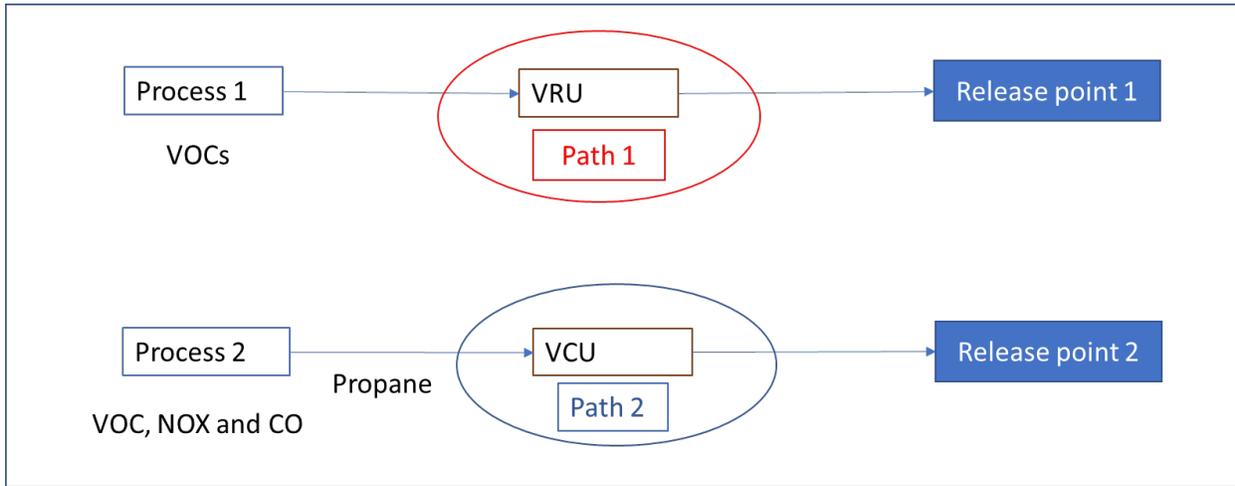


Table A. 11. Path Data for Controls Working Alternately

Path Data			
Path ID	Sequence Number	Control or Child Path Assignment	Assigned Control or Child Path Apportionment
Path 1	1	VRU	100%
Path 2	1	VRC	100%

Table A. 12. Release Point Apportionment for Controls Working Alternately

Release Point Data				
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment
Unit 1	Process 1	Path 1	Release Point 1	100%
	Process 2	Path 2	Release Point 2	100%

Appendix B Additional Resources

B. 1 Heat Content for Energy Conversions

While CAERS will not allow the user to do energy conversions yet, the following is a list of default heat content values for energy conversions for a variety of fuels. You should reach out to your SLT to determine the best approach for your specific fuel type and fuel use.

Table B. 1. Default Heat Values for Fuels

Fuel Name	Default High Heat Value	Units of Measure	Source
Anthracite	25.09	Million BTU/Short Ton	GHGRP
Anthracite Culm	11.513	Million BTU/Short Ton	EIA A5
Bagasse At 50% moisture	4000	BTU/Pound	AP42 AA
Bark At 50% moisture	4,500	BTU/Pound	AP42 AA
Bituminous Coal	24.93	Million BTU/Short Ton	GHGRP
Bituminous/Subbituminous Coal	17.25	Million BTU/Short Ton	GHGRP
Butane	0.103	Million BTU/Gallon	GHGRP
Coal	19.292	Million BTU/Short Ton	EIA A5
Coal Mixed (Commercial sector)	21.39	Million BTU/Short Ton	GHGRP
Coal Mixed (Industrial coking)	26.28	Million BTU/Short Ton	GHGRP
Coal Mixed (Industrial sector)	22.35	Million BTU/Short Ton	GHGRP
Coal Mixed (Electric Power sector)	19.73	Million BTU/Short Ton	GHGRP
Coke	24.8	Million BTU/Short Ton	EIA A5
Coke Mixed (Commercial sector)	21.39	Million BTU/Short Ton	GHGRP
Coke Mixed (Industrial coking)	26.28	Million BTU/Short Ton	GHGRP
Coke Mixed (Industrial sector)	22.35	Million BTU/Short Ton	GHGRP
Coke Mixed (Electric Power sector)	19.73	Million BTU/Short Ton	GHGRP
Coke Petroleum Coke	30	Million BTU/Short Ton	GHGRP
Coke Oven Gas	590	BTU/Standard Cubic Feet	AP42 AA
Digester Gas	0.619	Million Btu/Thousand Cubic Feet	EIA RNW
Distillate Oil Average	5.771	Million BTU/Short Ton	EIA A3
Distillate Oil 15ppm sulfur and under	5.7	Million BTU/Barrel	EIA A1
Distillate Oil > 15 ppm to 500 ppm sulfur	5.817	Million BTU/Barrel	EIA A1
Distillate Oil >500 ppm sulfur	5.825	Million BTU/Barrel	EIA A1
Distillate Oil Diesel	137381	Btu/Gallon	EIA CC

Fuel Name	Default High Heat Value	Units of Measure	Source
Distillate Oil No. 1	0.139	Million BTU/Gallon	GHGRP
Distillate Oil No. 2	0.138	Million BTU/Gallon	GHGRP
Distillate Oil No. 4	0.146	Million BTU/Gallon	GHGRP
Gas Blast Furnace Gas	0.092×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Gas Coke Oven Gas	0.599×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Gas Fuel Gas 4	1.388×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Gas Other Biomass Gases	0.655×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Gasoline	5.222	Million BTU/Barrel	EIA A1
Gasoline Natural Gasoline	0.11	Million BTU/Gallon	GHGRP
Gasoline Motor Gasoline	0.125	Million BTU/Gallon	GHGRP
Gasoline Aviation Gasoline	0.12	Million BTU/Gallon	GHGRP
Kerosene-Type Jet Fuel	0.135	Million BTU/Gallon	GHGRP
Kerosene-Type Jet Fuel	5.67	Million BTU/Barrel	EIA A1
Special Naphtha	0.125	Million BTU/Gallon	GHGRP
Naphtha Type Jet Fuel	5.355	Million BTU/Gallon	EIA A1
Kerosene	0.135	Million BTU/Gallon	GHGRP
Landfill Gas	0.485×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Lignite	14.21	Million BTU/Short Ton	GHGRP
Liquid Waste Rendered Animal Fat	0.125	Million BTU/Gallon	GHGRP
Liquid Waste Vegetable Oil	0.12	Million BTU/Gallon	GHGRP
Liquid Waste Ethanol	0.084	Million BTU/Gallon	GHGRP
Liquid Waste Biodiesel (100%)	0.128	Million BTU/Gallon	GHGRP
Liquid Waste Black Liquor	11.758	Million Btu/Short Ton	EIA RNW
Liquid Waste Waste Alcohol	3.800	Million Btu/Barrel	EIA RNW
Liquified Petroleum Gas (LPG)	0.092	Million BTU/Gallon	GHGRP
Natural Gas (Weighted U.S. Average)	1.026×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Natural Gas Methane	0.841	Million Btu/Thousand Cubic Feet	EIA RNW
Propane Gas	2.516×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Natural Gas Liquids Ethane 1	0.068	Million BTU/Gallon	GHGRP
Natural Gas Liquids Isobutane 1	0.099	Million BTU/Gallon	GHGRP
Natural Gas Liquids Natural Gasoline	0.11	Million BTU/Gallon	
Oil Used Oil	0.138	Million BTU/Gallon	GHGRP
Oil Unfinished Oils	0.139	Million BTU/Gallon	GHGRP
Oil Heavy Gas Oils	0.148	Million BTU/Gallon	GHGRP

Fuel Name	Default High Heat Value	Units of Measure	Source
Oil Lubricants	0.144	Million BTU/Gallon	GHGRP
Oil Asphalt and Road Oil	0.158	Million BTU/Gallon	GHGRP
Petroleum Liquid Other Oil (>401 deg F)	0.139	Million BTU/Gallon	GHGRP
Petroleum Liquid Pentanes Plus	0.11	Million BTU/Gallon	GHGRP
Petroleum Liquid Petrochemical Feedstocks	0.125	Million BTU/Gallon	GHGRP
Petroleum Liquid Butylene 1	0.105	Million BTU/Gallon	GHGRP
Petroleum Liquid Ethylene 2	0.058	Million BTU/Gallon	GHGRP
Petroleum Liquid Isobutylene 1	0.103	Million BTU/Gallon	GHGRP
Petroleum Liquid Still Gas	0.143	Million BTU/Gallon	GHGRP
Naphtha (<401 deg F)	0.125	Million BTU/Gallon	GHGRP
Propylene	0.091	Million BTU/Gallon	GHGRP
Blast Furnace Gas	0.092×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Process Gas	0.599×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Landfill Gas	0.485×10^{-3}	Million BTU/Standard Cubic Feet	GHGRP
Methane	0.841	Million Btu/Thousand Cubic Feet	EIA RNW
Propane	0.091	Million BTU/Gallon	GHGRP
Residual Oil No. 5	0.14	Million BTU/Gallon	GHGRP
Residual Oil No. 6	0.15	Million BTU/Gallon	GHGRP
Sludge Waste	7.512	Million BTU/Short Ton	EIA RNW
Sludge Wood	10.071	Million Btu/Short Ton	EIA RNW
Solid Waste Municipal Solid Waste	9.95 3	Million BTU/Short Ton	GHGRP
Solid Waste Agricultural Byproducts	8.25	Million BTU/Short Ton	GHGRP
Solid Waste Peat	8	Million BTU/Short Ton	GHGRP
Solid Waste Solid Byproducts	10.39	Million BTU/Short Ton	GHGRP
Solid Waste Tires	28	Million BTU/Short Ton	GHGRP
Solid Waste Plastics	38	Million BTU/Short Ton	GHGRP
Solid Waste Agricultural Byproducts	8.248	Million Btu/Short Ton	EIA RNW
Solid Waste MSW Biogenic	9.696	Million Btu/Short Ton	EIA RNW
Solid Waste Paper Pellets	13.029	Million Btu/Short Ton	EIA RNW
Solid Waste Railroad Ties	12.618	Million Btu/Short Ton	EIA RNW
Solid Waste Solid Byproducts	25.830	Million Btu/Short Ton	EIA RNW
Solid Waste Spent Sulfite Liquor	12.720	Million Btu/Short Ton	EIA RNW
Solid Waste Utility Poles	12.500	Million Btu/Short Ton	EIA RNW
Subbituminous	17.25	Million BTU/Short Ton	GHGRP
Wood and Wood Residuals (dry basis)	17.48	Million BTU/Short Ton	GHGRP
Crude Oil Crude Oil	0.138	Million BTU/Gallon	GHGRP

Energy Conversion Sources:

- EIA CC: <https://www.eia.gov/energyexplained/units-and-calculators/energy-conversion-calculators.php>
- EIA A1-A5: <https://www.eia.gov/totalenergy/data/monthly/#appendices>
- EIA RNW: https://www.eia.gov/renewable/annual/trends/pdf/table1_10.pdf
- GHGRP: Table C-1 to Subpart C of part 98¹; <https://www.epa.gov/sites/production/files/2015-06/documents/ghg-mrr-finalrule.pdf>
- AP42 AA: <https://www3.epa.gov/ttnchie1/ap42/appendix/appa.pdf>

B. 2 Unit Conversions in the CAER System

The following is a list of simple conversions that the CAER system can perform on units of measure to the level of detail (decimal values) that the form is performing them:

Table B. 2. List of Simple Unit of Measure Conversions in CAERS

Type of conversion:	Amount to convert from:	Units to convert from:	Amount to convert to (application conversion):	Units to convert to:
Area	1	ACRES	43560	SQUARE FEET
Area	1	SQUARE YARDS	9	SQUARE FEET
Area	1	ACRES	4840	SQUARE YARDS
Length	1	MILES	5280	FEET
Mass	1	KILOGRAMS	1000	GRAMS
Mass	1	POUNDS	0.45359237	KILOGRAMS
Mass	1	GRAMS	0.000001	MEGAGRAMS
Mass	1	KILOGRAMS	.001	MEGAGRAMS
Mass	1	POUNDS	.00045359237	MEGAGRAMS
Mass	1	GRAMS	1000000	MICROGRAMS
Mass	1	KILOGRAMS	1000000000	MICROGRAMS
Mass	1	POUNDS	453592370	MICROGRAMS
Mass	1	MEGAGRAMS	1E+12	MICROGRAMS
Mass	1	MILLIGRAMS	1000	MICROGRAMS
Mass	1	NANOGRAMS	0.001	MICROGRAMS
Mass	1	TONS	907,184,740,000	MICROGRAMS
Mass	1	GRAMS	1000	MILLIGRAMS
Mass	1	KILOGRAMS	1000000	MILLIGRAMS
Mass	1	POUNDS	453592.37	MILLIGRAMS
Mass	1	MEGAGRAMS	1000000000	MILLIGRAMS
Mass	1	GRAMS	1000000000	NANOGRAMS
Mass	1	KILOGRAMS	1E+12	NANOGRAMS
Mass	1	POUNDS	453592370000	NANOGRAMS
Mass	1	MEGAGRAMS	1E+15	NANOGRAMS
Mass	1	MILLIGRAMS	1000000	NANOGRAMS
Mass	1	GRAMS	.0022046226218488	POUNDS
Mass	1	TONS	2000	POUNDS

Type of conversion:	Amount to convert from:	Units to convert from:	Amount to convert to (application conversion):	Units to convert to:
Mass	1	GRAMS	.000001102311310924388	TONS
Mass	1	KILOGRAMS	.0011023113109244	TONS
Mass	1	MEGAGRAMS	1.102311310924388	TONS
Mass	1	MILLIGRAMS	.000000001102311310924388	TONS
Mass	1	NANOGRAMS	.0000000000000001102311310924388	TONS
Volume	1	CUBIC FEET	.028316846592	CUBIC METERS
Volume	1	GALLONS	.00378541178	CUBIC METERS
Volume	1	CUBIC FEET	.037037037037037	CUBIC YARDS
Volume	1	GALLONS	.004951131682011	CUBIC YARDS
Volume	1	CUBIC METERS	1.307950619314392	CUBIC YARDS
Volume	1	CUBIC FEET	7.480519488424055	GALLONS

B. 3 Volume Conversions for Natural Gas

Volumetric conversions of natural gas depend on the physical conditions of the natural gas as follows.

To convert the volume of natural gas below 60 psia:

Under these conditions the Ideal Gas Law can be applied. Subscript 1 indicates gas at one set of conditions of absolute temperature (T) in degrees Rankine (°R), and absolute pressure (P) in pounds per square inch absolute (psia), subscript 2 indicates the same gas at a different set of conditions for the gas.

$V_1 = T_1/P_1 (P_2 V_2/T_2)$, to get V1 in cubic feet (cf).

A standard cubic foot (scf) of gas is defined as a cubic foot at a temperature of 21 °C (70 °F or 530 °R) and a pressure of 101.325 kilopascals [kPa] (14.696 psia), except for liquefied petroleum gas.

Therefore, if converting from a gas with volume V2 at standard cubic feet of gas to V1, the formula to apply would be:

$$V_1 = T_1/P_1 (14.696 \times V_2)/530$$

To convert the volume of natural gas above 60 psia:

Natural gas does not behave like an ideal gas in this case. The formula requires a compressibility factor (Z).

$V_1 = V_2(Z_1 T_1 P_2)/(Z_2 T_2 P_1)$, to get V1 in cf,

where Z1/Z2 is the compressibility ratio.

For example: If converting from a gas with volume V2 at 60 °F (or 520 °R) and 14.73 psia to another volume, the formula would be:

$$V1=V2(Z1 \times T1 \times 14.73)/(Z2 \times 520 \times P1),$$

Sources:

Paul R. Ludtke, Natural Gas Handbook, National Bureau of Standards, U.S. Department of Commerce, Boulder, CO, August 1986. p 14.

NIST, Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality (2017 ed.). National Institute of Standards and Technology (NIST). November 2016. p. 120. doi:10.6028/NIST.HB.130-2017. Retrieved 21 November 2017.

B. 4 State Emission Factor Compendium

If your SLT Authority allows it, you may use emission factors available from other states. To browse the Emission Factor Compendium, go to the [CAER website](#) and look under the “Development of a State-Local-Tribal Emission Factors Compendium”. You will find three spreadsheets (from Minnesota, Michigan and South Carolina), that may contain an emission factor your SLT deems appropriate for you to use.

Future versions of CAERS will allow you to select the factors from the compendium by selecting “SLT Emission Factor” from the calculation method list when estimating emissions.

B. 5 Example of Controls Calculations

The following example may help you understand how the different percentages involved in controls calculations are related. This example may help you estimate your “Overall Control %” for your individual control and/or control path. The example is illustrative, you should work with your SLT authority to determine the best way to do these calculations for your specific controls configuration.

The following definitions are used in this example:

Percent Capture Efficiency: The percentage of an exhaust gas stream that is actually collected for routing to a set of control devices. This value could be obtained from the vendor, or measured at the facility. The capture es equivalent to the release point apportionment.

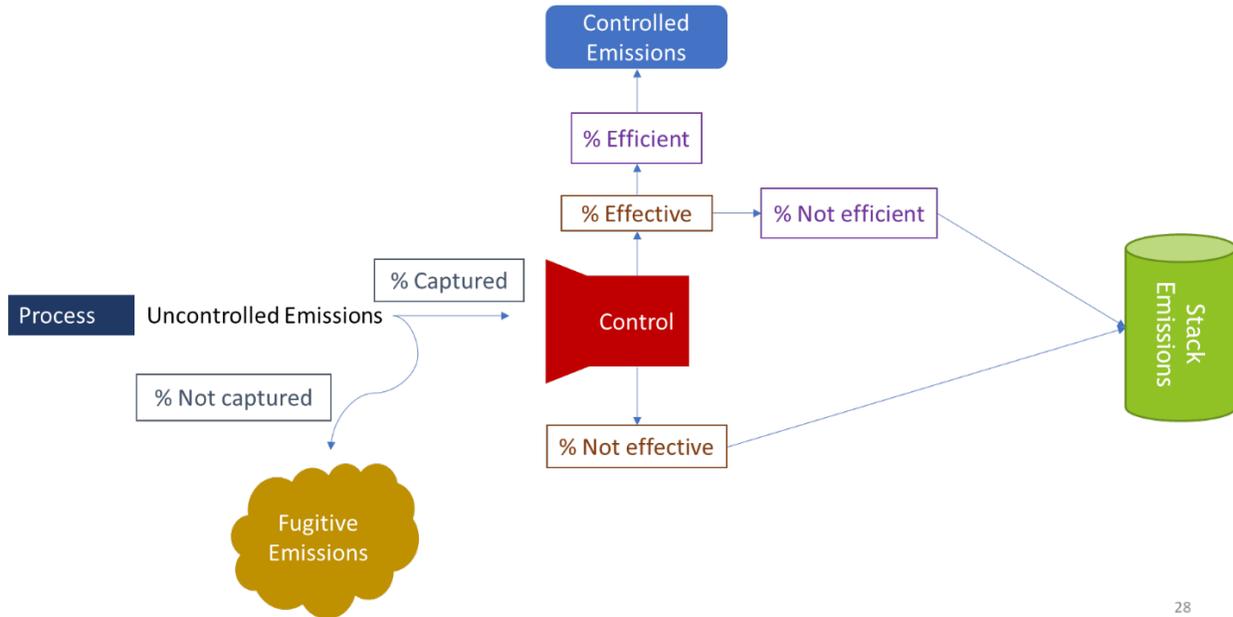
Percent Control Effectiveness: The percentage of time or activity throughput that a control approach is operating as designed, including the capture and reduction devices. This percentage accounts for the fact that controls typically are not 100 percent effective because of equipment downtime, upsets and decreases in control efficiencies. This could be estimated from the amount of time the control is operational, versus down for maintenance or repairs.

Percent Reduction Efficiency: The percent reduction achieved for the pollutant when all control measures are operating as designed. This could be obtained from the vendor.

Assume you have a control or control path for Particulate Matter with the following:

- capture efficiency (cap) is 90%,
- control effectiveness (effect) is 80%,
- control efficiency (effic) is 95%, and
- uncontrolled (unc) or pre-control emissions total 100 tons.

Figure B. 1. Flow of Uncontrolled Emissions



Then:

Total uncontrolled emissions = captured emissions + fugitive (non-captured emissions) = $[unc \times cap] + [unc \times (1-cap)]$.

Captured emissions= emissions when control is not effective + emissions when control is effective = $[unc \times cap \times (1-effect)] + [unc \times cap \times (effect)]$

Emissions when control is effective = emissions reduced from control efficiency (controlled emissions) + emissions from control inefficiency = $[unc \times cap \times (effect) \times effic] + [unc \times cap \times (effect) \times (1-effic)]$

Stack emissions = emissions when control is not effective + emissions from effective control inefficiency = $[unc \times cap \times (1-effect)] + [unc \times cap \times effect \times (1-effic)] = unc \times cap [(1-effect) + effect \times (1-effic)] = unc \times cap (1-effect + effect \times effic) = unc \times cap \times (1-effect \times effic)$

$$\text{Fugitive emissions} = 100 \times (1-0.9) = 10$$

$$\text{Stack emissions} = 100 \times 0.9 \times (1-0.8 \times 0.95) = 21.6$$

$$\text{Controlled emissions} = unc \times cap \times effect \times effic = 100 \times 0.9 \times 0.8 \times 0.95 = 68.4$$

$$\text{Total emissions} = \text{Controlled emissions} + \text{Stack emissions} + \text{Fugitive emissions} = 68.4 + 21.6 + 10 = 100$$