

EMIT Emissions Statement Guidance Document: How to Use EMIT & Frequently Asked Questions (FAQs)

Overview of Guidance Document

This document includes an overview of the EMIT system used for submitting annual emissions reports. The information provided in both the [Guidance](#) and [FAQ](#) sections are not exhaustive, so do not hesitate to reach out to the State of Connecticut Department of Energy and Environmental Protection (CT DEEP) Air Quality Modeling and Emissions Inventory ([AQME](#)) Group for additional information.

This document will be continuously updated and posted to the [Emissions Inventory webpage](#), so please be sure to check it regularly for the most up-to-date guidance.

Furthermore, please reach out to the [AQME](#) team if you have feedback on this document.

Updates for the 2021 Reporting Period

New Pollutant

Please note that on January 5, 2022, the EPA announced that 1-bromopropane (1-BP), also known as n-propyl bromide or nPB, has been added to the Hazardous Air Pollutants (HAPs) list. For more information, please see Section 112 of the Clean Air Act ([87 Fed. Reg. 393](#)).

The EPA has provided a [Q&A document](#) with additional details.

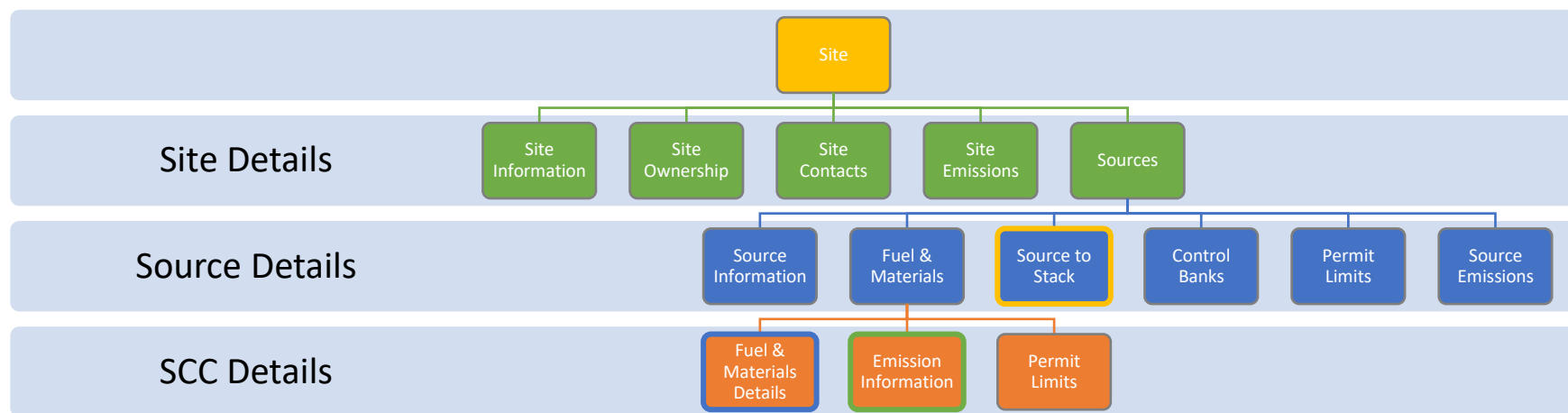
For further information about reporting HAPs to the State of Connecticut, please see this document's [FAQ on HAPs](#).

Updated Guidance on Tanks

The EPA revised [Chapter 7 of AP-42](#) in March 2020 regarding how emissions from gasoline storage tanks are calculated. The revision to [Chapter 7 of AP-42](#) includes the means of estimating emissions from roof landings, tank cleanings, and degassing of gasoline storage tanks based on previously available calculation methodologies. These emissions should have always been included in the determination of actual and potential emissions from bulk gasoline storage tanks. Therefore, sources with bulk gasoline storage tanks must submit annual emissions statements that include emissions from roof landings, tank cleaning, degassing, etc., for every bulk gasoline storage tank. Additionally, sources should maintain detailed calculations of these emissions and the parameters measured and/or used in the calculations on site and make such available to CT DEEP upon request.

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Figure 1: Layout of EMIT Tabs (Navigable Website Schematic)



Key EMIT tabs for Emission Reporting:

Fuel & Materials Details - Enter Annual and Summer Day Fuel Usage

Emission Information - Update Emission Factors

Source to Stack - Update Stack Test Date

(Click on a box to jump to the section)

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EMIT Tabs Overview and Guidance

Site Details

Site Details - Site Information

The “Site Information” tab is populated with facility information initially provided to CT DEEP in the permit application. This tab can only be edited by CT DEEP, so please contact the [AQME](#) team if any existing site information needs to be updated.

Site Details - Site Ownership

The “Site Ownership” tab is populated with facilities information initially provided to CT DEEP from the permit application and is reflective of the current permit on file. This tab can only be edited by CT DEEP, so please contact the [AQME](#) team if there is a change in site ownership to file a permit transfer.

Site Details - Site Contact

The “Site Contact” tab is populated with the contact information of people at the facility. The contacts listed here help [AQME](#) establish direct correspondence, so up-to-date contact information is paramount. Please review this annually to ensure all necessary contacts are listed and have the correct contact information.

Site Details - Site Emissions

The “Site Emissions” tab displays the total emissions reported and emissions allowed to be emitted for the facility by pollutant. The information in this tab is collated from the “Source Emissions” tab for each source, so it cannot be directly edited. See the “Emission Information” tab under the “[Fuel & Materials](#)” section for information on editing emissions data.

Site Details - Sources

The “Sources” tab displays all active sources at the facility and using the “Select” buttons under the right-most “Options” column are the pathway to modifying source data.

The letter prefixes of Point IDs stand for the following:

Table 1: List of Point ID Prefixes

Prefix	Type of Source
P	Permitted
E	Permit-by-rule (e.g. 3b)
R	Registered (Pre-1990)
U	Unpermitted/Unregistered

If any sources are missing, first check the “Show Inactive” button under “Filter Criteria”. If the source still is not shown and is an E type source, please add it using the “Add New Source” feature at the bottom of the page. If the missing source is a P, R, or U type source, please contact the [AQME](#) team to get the source added.

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Source Details

After 'selecting' the source to edit, six tabs will appear under the heading "Source Detail":

- Source Information
- Fuel & Materials
- Source to Stack
- Control Banks
- Permit Limits
- Source Emissions

Source Details - Source Information

The "Source Information" tab has detailed information of the selected source obtained from the application and the issued permit. The facility can update information such as the revocation date. If such a change is made, please add a note so [AQME](#) is aware of the change.

Fuel & Materials

The "Fuel & Materials" tab is where the Source Classification Code (SCC) is entered for each activity for the unit. Please contact [AQME](#) team if a change should be made to an existing SCC in EMIT. New SCCs should only be added when creating new E-type sources.

After selecting the SCC row to edit, three more tabs will appear:

- Fuel & Materials Data
- Emissions Information
- Permit Limits

SCC Details - Fuel & Materials Details

The "Fuel & Materials Details" tab is where activity data for each source is entered into EMIT. The information provided here, such as the "Summer Day Use", "Annual Usage", "Hours of Operation", is used in the "Emission Information" tab to calculate the annual and summer day emissions for each process.

Note: Make sure the entered values are in the correct units. For example, fuel/material usage can be reported in thousands or millions of gallons or feet, i.e. 1 E3GAL = 1,000 gal & 1 E6FT3 = 1,000,000 ft³.

SCC Details - Emission Information

The "Emissions Information" tab is where the emissions are calculated for the SCC process. This is done by taking the material usage data from the "Fuel & Materials Details" tab, the control efficiencies from the "Control Bank" tab, and from the emission factors entered here.

Each emission factor must have an "Emission Factor Origin" that explains where the emission factor came from. The table on the following page lists the possible Emission Factor Origins in order of highest preferability, however, the Emission Factor Origin type should always be selected depending upon its applicability and appropriateness.

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Table 2: List of Emission Factor Origins

Emission Factor Origin	How Are Emissions Entered into EMIT?	Who Enters Value?	General Quality of Emissions
Always use these origins if able:			
CEMS - CONTINUOUS EMISSION MONITORING SYSTEM	Direct Input	User	High
STACK TEST - AFTER CONTROL	Controlled EF	User	High
STACK TEST - PRIOR CONTROL	Uncontrolled EF	User	High
The following origins are <i>generally</i> listed by CT DEEP preference:			
ENGINEERING JUDGMENT	Uncontrolled EF	User	Varies
MATERIAL BALANCE	Uncontrolled EF	User	Moderate
MANUFACTURER SPECIFICATION	Uncontrolled EF	User	Varies
EPA EMISSION FACTOR	Uncontrolled EF	System	Varies
EPA ALT EMISSION FACTOR	Uncontrolled EF	User	Varies
EPA SPECIATION PROFILE	Uncontrolled EF	User	Varies
STATE/LOCAL SPECIATION PROFILE	Uncontrolled EF	User	Varies
STATE/LOCAL EMISSION FACTOR	Uncontrolled EF	User	Varies
SITE-SPECIFIC EMISSION FACTOR	Uncontrolled EF	User	Varies
VENDOR EMISSION FACTOR	Uncontrolled EF	User	Varies
TRADE GROUP EMISSION FACTOR	Uncontrolled EF	User	Varies
GHG	Uncontrolled EF	User	Varies
TANK MODEL	Direct Input	User	Varies
Origins that should only be used when directed by CT DEEP:			
EMITTANT ACCOUNTED FOR	No emissions	System	N/A
NO DEFAULT EPA FACTOR	No emissions	System	N/A
Emission Statements Containing the Following Origins will NOT be Accepted			
SURROGATE (INTERNAL ONLY)	Uncontrolled EF	CT DEEP	Varies
EXPIRED EMIT EPA DEFAULT FACTOR	Uncontrolled EF	System	Varies

With the exception of the “CEMS...”, “STACK TEST...”, “TANK MODEL” emission factor origins, all emissions are calculated in EMIT by using uncontrolled emission factors. The “STACK TEST – AFTER CONTROL” emission factor origin is the only emission factor origin that requires the entry of a controlled emission factor. A controlled emission factor already includes compensation for applied controls, where an uncontrolled factor needs to have control efficiencies applied to obtain a correctly calculated emission estimate.

Please contact the [AQME](#) team for any questions about emission factor origins.

SCC Details - Permit Limits

The “Permit Limits” tab displays the applicable limits for the process as listed in the permit or appropriate regulation. This tab can only be edited by CT DEEP, so please contact the [AQME](#) team if the limits displayed here appear incorrect.

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[Source Details - Source to Stack](#)

The “Source to Stack” tab is where the stack information for each unit is entered. Stack information is populated by CT DEEP using facility provided information from the application or issued permit. Stack information can be entered for E-type sources, but CT DEEP reserves the right to update any changes to an existing stack information. If an update is required, make a note of it in your emissions statement submission or please contact the [AQME](#) team directly.

If a stack test was performed, please update the “Stack Test Date” field which can be found by selecting the stack.

This tab is also where the control equipment for the source is entered. Please add a note to your emissions statement submission if there is any update to the listed controls or there is an addition or removal of any controls.

[Source Details - Control Banks](#)

The “Control Banks” tab is where the control equipment entered on the “Source to Stack” tab is associated with the pollutants it controls. Each pollutant-control relationship must have an associated control efficiency. Please notify the [AQME](#) team if any controls are missing or control efficiencies should be changed.

[Source Details - Permit Limits](#)

The “Permit Limits” tab displays the applicable limits for the source (or a group of sources) as listed in the permit or appropriate regulation. This tab can only be edited by CT DEEP, so please contact the [AQME](#) team if the limits displayed here appear incorrect.

[Source Details - Source Emissions](#)

The “Source Emissions” tab displays the summation of actual emissions from each SCC listed under the “Fuel & Materials” tab. As such, the information on this tab is not directly editable.

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Frequently Asked Questions

General Questions

What Pollutants do I need to report?

All criteria pollutants & their precursors and [Hazardous Air Pollutants](#) (HAPs) listed in [Section 112 of the 1990 Clean Air Act \(CAA\) Amendments](#).

The six criteria pollutants designated by the EPA are:

1. Ground-level Ozone
2. Nitrogen Dioxide (NO₂)
3. Carbon Monoxide (CO)
4. Particulate Matter (PM)
5. Sulfur Dioxide (SO₂)
6. Lead (Pb)

Ground-level ozone information is collected by the reporting of precursor compounds Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NO_x), which includes NO₂, because these compounds react in the presence of sunlight to form ozone.

PM is reported in three forms: condensable (PM CON), filterable (PM FIL), and primary (PM PRI) particulate matter. PM PRI is the sum of PM CON and PM FIL as seen in the following equation:

$$PM_{xx} PRI = PM_{xx} FIL + PM CON$$

where *xx* is either 10 or 2.5 because PM FIL and PM PRI are reported in two sizes: particles with aerodynamic diameters less than or equal to 10 μm (PM₁₀) and 2.5 μm (PM_{2.5}). PM_{2.5} is a subset of PM₁₀ and EMIT requires that the emissions of PM_{2.5} are equal to or less than the emissions of PM₁₀. For more information on PM, please review the [“Stack Test Emission Factor Origins and Particulate Matter \(PM\) Pollutants”](#) guidance.

NH₃ is a precursor compound for PM because it reacts with nitric and sulfuric acids in the atmosphere to form fine particulate matter.

Do I report Hazardous Air Pollutants (HAPs)?

Yes, you need to report only those HAPs identified in Section 112 of the clean air act amendment that have not been delisted by EPA, which are emitted at your facility. To assist you in reporting HAPs, EMIT will pre-populate your emission statement with EPA default uncontrolled HAP emission factors from WebFIRE based upon the SCCs associated to each source at your facility. When filling out your emission statement you should double check to ensure that you have properly accounted for reductions from control equipment. For example, if a source has VOC controls and the source emits VOC HAPs you should review to see if the VOC HAP emissions reported have accounted for the reductions caused by the existing controls. The same should be done for PM controls when the source is also emitting PM HAPs. The [“Control Banks”](#) tab is used to add the control efficiency for a pollutant at a source.

What should I do if I need to add or change a SCC for a source?

EMIT will support the addition of an SCC to a source, so you should be able to add the SCC to the source. If material appears to be missing, especially if Summer Day Use and Annual Usage has units of tons and

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no material specified, please contact the [AQME](#) team so that we can assign the proper units and material to the SCC. Also, if you expected EPA default emission factors based on WebFIRE data for this SCC, you can contact the [AQME](#) team to have the defaults loaded or use the “Alt EPA Emission Factor” method code with the appropriate emission factors.

[Should I continue to include non-photochemically reactive VOC HAPs such Methylene Chloride and 1,1,1-trichloroethane in my criteria air pollutant VOC emission estimate?](#)

No, do not include non-photochemically reactive VOCs in the VOC pollutant emission estimates provided in the Criteria Air Pollutant grouping. Please report your non-photochemically reactive VOC HAPs in the non-photochemically reactive VOC HAPs pollutant grouping. In the past, [AQME](#) had requested that Methylene Chloride and 1,1,1-trichloroethane be included in the VOC emission estimates. However, with EMIT’s ability to collect HAPs individually we no longer need to implement this work around. For example, if you have a Methylene Chloride degreaser that emitted 2 tons of Methylene Chloride, you would now report 0.0 emissions for VOC and 2.0 tons of Dichlormethane (Methylene Chloride) under the non-photochemically reactive VOC HAPs grouping.

[How do I estimate Fugitive Emissions from Loading Racks?](#)

Use the emission factors stipulated in your permit converted into the requested units, or source specific information that you have, or refer to EPA’s latest guidance found in [Section 5.2 of AP-42, Fifth Edition, Volume I](#).

[Why does the Summer Day Use and Annual Usage have units of measure but no material specified?](#)

If material appears to be missing, especially if Summer Day Use and Annual Usage has units of tons and no material specified, please contact the [AQME](#) team so that the proper units and material can be assigned to the SCC.

[Do I have to report every source listed in my Title V permit?](#)

See Attachment B sent via email from AQME in January 2022.

[What do the variables “S” & “A” stand for in EPA emission factors?](#)

“S” stands for sulfur content [%] and “A” stands for ash content. These values are entered under the “Fuel & Materials Details” tab in the fields “Sulfur Content” and “Ash Content”, respectively.

[Why are emissions not calculating properly?](#)

Check to ensure that all the input information is correct. For example, ensure the values entered in the “Summer Day Use”, “Annual Usage”, “Sulfur Content” (if applicable), and “Ash Content” (if applicable) on the “Fuel & Materials Details” tab are accurate. In addition, ensure the control efficiency for the pollutant is entered correctly on the “Control Banks” tab.

Emissions Factor Questions

[The allowable emissions at my site are incorrect, how can I fix these?](#)

Please let the [AQME](#) team know if the allowable emission estimates are incorrect.

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What do I do if the EPA default emission factor is wrong?

If you notice that the EPA default emission factor appears to be wrong, then select the edit button and then hit save. This will refresh the emission factor from the EPA default emission factor table. Some of the EPA default emission factors used in previous years have been revoked by EPA so use the latest EPA emission factor resources like AP-42 or EPA's FIRE database to ensure that indeed there is an error. If the EPA default emission factor in EMIT is incorrect then select the edit button for the incorrect emission factor and change the emission factor origin to "EPA Alt Emission Factor" and type in the correct emission factor. Finally, click on the Notes tab above and type in "The EPA default emission factor is incorrect, so the emission factor origin was changed to EPA Alt Emission Factor and the correct EPA default emission factor was entered." This will help us identify where the EPA default emission factor is incorrect so that we can fix this problem and expedite the review of your emission statement.

What is the Difference between an Uncontrolled and Controlled Emission Factor?

All emission factors in EMIT, other than "STACK TEST – AFTER CONTROL", "CEMS...", and "TANK MODEL", are uncontrolled emission factors, which means the efficiencies of control are included in the emissions calculation as seen in the following equation:

$$E \left[\frac{\text{mass}}{\text{time}} \right] = A \left[\frac{\text{volume}}{\text{time}} \right] * EF|_{\text{Uncontrolled}} \left[\frac{\text{mass}}{\text{volume}} \right] * \left(1 - \frac{CE|_{\text{overall}} [\%]}{100} \right)$$

Where:

- E is the actual emissions of a pollutant;
- A is the actual fuel activity as reported in the "Fuel & Materials Details" tab;
- $EF|_{\text{Uncontrolled}}$ is the uncontrolled emission factor for the pollutant as reported in the "Emission Information" tab;
- $CE|_{\text{overall}}$ is the Overall Control Efficiency of the control equipment for the pollutant as reported in the "Control Banks" tab.

Note: Activity and emission factor units are generalized and could be in units of mass or volume depending on the material being consumed.

"STACK TEST – AFTER CONTROL" is the only controlled emission factor in EMIT, which means the control efficiency piece of the above equation is included in the emission factor. For more information on this emission factor origin, please review the ["Stack Test Emission Factor Origins and Particulate Matter \(PM\) Pollutants"](#) guidance.

How do I report emissions based on CEMS?

When you are on the screen where you enter in emission factors, select "CEMS..." for the emission factor origin for the monitored pollutant and then EMIT allows you to enter in your CEMS emissions directly. You no longer have to back calculate emission factors. EMIT will not allow you to enter in an emission factor when you select "CEMS..." as your emission factor origin.

1) If you have CEMS on a multi-fueled source, then select the EPA default emission factor for the cleanest fuels and let EMIT calculate the emissions. The sum of these pollutant emissions should be subtracted from the total CEM monitored emissions for this emission unit. Then enter in the result of this calculation for pollutant emissions of the dirtiest fuel (the one you think resulted in the most emissions during the

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year) by selecting the Emission Factor Origin “CEMS...”. For example, a facility has CEMS for NO_x on a boiler that burns three different fuels (Coal, #6 oil and #2 oil). If the usage of all 3 fuels are the same then #6 oil and # 2 oil would be considered cleaner than coal so for these two fuels use the default EPA emission factors and let EMIT calculate the emissions. Let’s say that the resulting emissions for #6 oil and #2 oil are 20 and 30 tons per year and that the CEM total emissions for the source is 120 tons per year. Then 70 tons per year of NO_x would be assigned to the Coal SCC after selecting the Emission Factor Origin of “CEMS” and typing the 70 directly into the emissions field. For municipal waste incinerators the dirtiest fuel is considered the municipal waste being combusted.

2) Alternate option: If you have CEM on a multi-fueled source and you are a Municipal Waste Incinerator, then for the SCC that represents the incineration of municipal waste, select CEMS as the emission factor origin for the pollutant the CEM monitors and enter in the emissions directly. It is assumed that the emissions from the auxiliary fuels are small so for these SCCs and CEM monitored pollutants select emission factor origin “EMITTANT ACCOUNTED FOR”. For example, your municipal waste incinerator has a CEM for NO_x and three different SCCs. One SCC describes the combustion of municipal waste (5-01-001-03) and two other SCCs that describe the auxiliary fuels used to help combust the garbage (1-01-002-05 and 1-01-006-02). For SCC 5-01-001-03 in the Emission Information Tab, set the emission factor origin to CEMS and enter in the CEM emission for NO_x. For SCCs 10100205 and 10100602 go to the Emission Information Tab for each of these SCCs and set the emission factor origin for NO_x to “EMITTANT ACCOUNTED FOR”; this will set the NO_x emissions for these SCCs to zero.

[What do I do if the activity units for Annual and Daily Usages or emission factors units are wrong?](#)

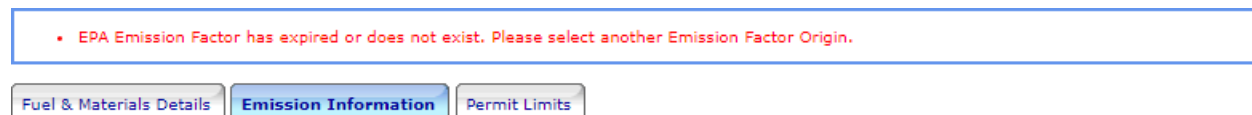
If the activity or emission factor units are wrong, contact the [AQME](#) team. If you are not sure what the correct activity units or emission factor units are but suspect that they are wrong in EMIT, you may refer to a previously submitted emission statement to see what the correct units are for the source/SCC in question. If there are errors in the activity units please select the Notes Tab above and type in “The activity units and emission factor units are incorrect they should be...”.

[What do I do if there is no EPA default SO₂ emission factor but there is a sulfur oxides \(SO_x\) emission factor?](#)

Use the SO_x emission factor in place of SO₂.

[What does it mean if the Emission Factor Origin is “EPA EMISSION FACTOR” but the default Emission Factor value provided by EMIT is zero?](#)

Experiencing this means that there is no EPA emission factor available for a pollutant under the Source Classification Code (SCC). To illustrate this, the following message is likely displayed on the screen as well:



As the message instructs, please change the Emission Factor Origin and enter a determined emission factor or emissions value if the origin is “CEMS...” or “TANK MODEL”.

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Stack Test Questions

Do I need to report control equipment associated to a source even if I cannot quantify its control efficiency or the control efficiency is not used in the emission calculations?

Yes, specifying the control equipment that you have more completely describes your source. For example, units with low NO_x burners should identify this control device on the “[Source to Stack](#)” tab and “[Control Banks](#)” tab even though the percent control efficiency may not be known, or the control efficiency is not used in the emission calculation because the emissions are based on CEM or an after-control emission factor.

Do I need to report my Stack Test Date?

Yes, if emission factors are based upon a stack test please remember to fill in the stack test date on the Stack Information panel located on the “[Source to Stack](#)” tab. Stack test-based emission factors, should be based on the most recent stack test approved by CT DEEP.

What emission factor value should be used for PM_{2.5}-FIL and PM_{2.5}-PRI when a non-EPA Emission Factor is being used for PM₁₀-FIL or PM₁₀-PRI?

If a refined emission factor is being used for PM₁₀-FIL or PM₁₀-PRI, such as a stack tested emission factor or manufacturer specifications, but there is not a refined value for PM_{2.5}, the appropriate action is to set the emission factors for PM_{2.5} equal to their PM₁₀ counterparts with an Emission Factor Origin of “ENGINEERING JUDGMENT”. This is the most conservative approach to documenting PM_{2.5} emissions.

What is the percent seasonal use?

The percent seasonal use is the percent of the total yearly operating hours that occurred during each of the following periods:

1. December 1st (of the previous year) through the end of February of the reporting year;
2. March 1st through May 31st;
3. June 1st through August 31st;
4. September 1st through November 30th;

The sum of the four percentages must equal exactly 100%.