

New Jersey Department of
Environmental Protection
Division of Air Quality

Emission Statement Guidance Document



DISCLAIMER

This Guidance Document is designed only to assist in complying with New Jersey's Emission Statement rule (N.J.A.C. 7:27-21). The Emission Statement Guidance Document has not been promulgated by the Department as a rule. Therefore, it does not have a rule's legal force and effect. If any difference is found between the Emission Statement Guidance Document and the Emission Statement rule, the rule in all cases and interpretations takes precedence over this guidance document.

Furthermore, the Department is under no legal obligation to notify persons of their legal responsibility to comply with the Emission Statement rule (other than the legal obligations of the Administrative Procedures Act). Any mailing of documents done by the Department is done strictly as a courtesy.

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Assistance in completing the Emission Statement is available by e-mail or telephone between the hours of 9:30 a.m. and 3:00 p.m., Monday to Friday, except on state holidays. Besides existing staff, the New Jersey Department of Environmental Protection may also engage the services of a contractor to provide assistance during peak periods of activity.

NJDEP: <https://dep.nj.gov/>

Air Energy and Materials Sustainability: <http://www.nj.gov/dep/aqes>

Emission Statement Program: <https://dep.nj.gov/boss/emission-statement-program/>

RADIUS: <https://dep.nj.gov/boss/radius/>

Emission Statement Listserv: <https://dep.nj.gov/boss/emission-statement-listserv/>

NJDEP Online Portal: <https://dep.nj.gov/online/>

N.J.A.C 7:27-21: <https://dep.nj.gov/wp-content/uploads/aqm/sub21.pdf>

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INTRODUCTION

Most of the state of New Jersey is in non-attainment of the ozone National Ambient Air Quality Standards. Since 1990, the Clean Air Act has required states with designated ozone non-attainment areas to gather emissions data of volatile organic compounds and oxides of nitrogen. These two air contaminants react in the presence of sunlight to form ozone in the lower atmosphere, the troposphere, where it affects human health. The Clean Air Act also requires a periodic, comprehensive inventory of all air pollutant sources in the state.

The Emission Statement rule, N.J.A.C. 7:27-21, establishes regulations for the annual reporting of air contaminant emissions from stationary sources. The air contaminants reported in the Emission Statement include carbon monoxide, sulfur dioxide, ammonia, particulate matter, lead, volatile organic compounds, oxides of nitrogen, carbon dioxide, methane and 49 toxic air pollutants. The Emission Statements provides an estimate of the actual emissions to assist in the monitoring of the State's progress toward the mandatory emissions reduction protocols and attainment of the ozone and carbon monoxide National Ambient Air Quality Standards.

Data from the Emission Statement program is used as the basis of the emissions inventory for New Jersey's State Implementation Plan. Several newer environmental protection initiatives highlighted the need for a comprehensive and accurate inventory of air contaminants. The strategic protocol of the New Jersey Department of Environmental Protection and the National Environmental Performance Partnership were created to shift the indicators of environmental performance to environmentally based indices.

The data obtained from the Emission Statement program will be made publicly available and submitted to the EPA national databases, the National Emissions Inventory and the National Air Toxics Assessment. These databases are used by federal and regional planning agencies in the development of environmental policy. Data from the emissions statements is also used for the calculation of annual New Jersey Title V emissions fees as well as for permitting and compliance purposes.

Timeline

Request for Non-Applicability	<i>February 1 of submittal year</i>
Request for Extensions	<i>May 1 of submittal year</i>
Due Date (electronic submissions)	<i>May 15 of submittal year</i>

APPLICABILITY

Emission Statement Applicability

The Department requires an Emission Statement from any facility whose actual emissions or facility wide Potential to Emit meet or exceed any of the following thresholds (refer to N.J.A.C. 7:27-21.2):

- 5 tons per year of Pb
- 10 tons per year of VOC
- 25 tons per year of NO_x
- 100 tons per year of any of the following – CO, NH₃, PM_{2.5}, PM₁₀, SO₂, TSP, or CH₄

The facility-wide Potential to Emit incorporates the following emissions sources:

- All allowable emissions from permitted sources;
- The emissions from all non-permitted sources operating at maximum capacity and assuming that the source operates for 8,760 hours per year; and
- All maximum fugitive emissions.

Please also see the definition of Potential to Emit in the Glossary.

Request for Non-Applicability

If a facility filed an Emission Statement during a prior year and now believes it is no longer subject to the Emission Statement applicability statutes specified in N.J.A.C. 7:27-21.2, the Responsible Official of the facility is required to submit a Claim of Non-Applicability, as prescribed in N.J.A.C. 7:27-21.10. The facility must send in the Claim by February 1 of the submittal year. This Claim cannot be submitted by a consultant. The facility must continue to submit an annual Emission Statement until a Claim of Non-Applicability has been received and approved by the Department.

CREATING AN EMISSION STATEMENT FILE

All Emission Statements sent to the Department must be created using the latest version of the Department's Remote AIMS Data Input User System (RADIUS). Visit <https://dep.nj.gov/boss/radius/> to download the latest version of RADIUS.

Creating an Emission Statement from Permit Files

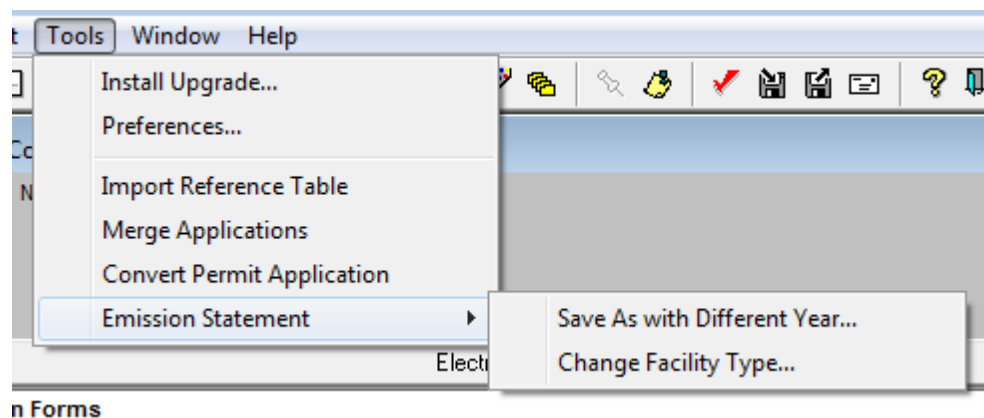
Facilities can create a new Emission Statement document in RADIUS from the permit files.

1. Import all permit files into RADIUS using the File>Import function.
2. Use the Tools>Convert Permit Application function to convert a permit file into an Emission Statement file.
3. When prompted for the emission year, refer to the definition of Emission Year in the Glossary.
4. Use the Tools>Merge Applications function to combine data points into one file.

Creating an Emission Statement from a Previous Year's Emission Statement

To convert an Emission Statement from a previous for use in the current year:

1. Import the previous year's file into RADIUS using the File>Import function.
2. Use the Tools>Emission Statement>Save As with Different Year
3. When prompted for the emission year, refer to the definition of Emission Year in the Glossary.



Locked Files

Use the File>Lock/Unlock function to unlock a locked "Submit" file in RADIUS.

FACILITY INFORMATION FORMS

Open the Emission Statement using the File>Open function to reveal the Table of Contents.

Facility Information Forms
Facility Profile (General)
Facility Profile (Planning)
Non-Source Fugitive Emissions
Insignificant Source Emissions
Equipment Inventory
Control Device Inventory
Emission Point Inventory
Emission Unit/Batch Process Inventory
Subject Item Group Inventory
Emission Reporting Form
Emission Statement

There are nine screens listed under Facility Information Forms in the Table of Contents. To activate a screen in RADIUS, double-click the mouse on the screen title. The forms labeled “Non-Source Fugitive Emissions,” “Insignificant Source Emissions,” “Equipment Inventory,” “Control Device Inventory,” “Emission Point Inventory,” “Emission Unit / Batch Process Inventory,” and “Subject Item Group Inventory” list the equipment and accompanying operating parameters for which emissions will be reported. Emissions data is not entered in these forms.

For a complete list of NAICS codes, visit: <https://www.census.gov/naics/>

EMISSION STATEMENT STRUCTURE

Required Sources

The following sources must be included in the Emission Statement:

- Significant/permitted sources (any item that was permitted for any period of time during the reporting year);
- Insignificant sources; and
- Fugitive emissions at the facility that are not associated with any source operation.

Refer to Appendix B for a list of exempt sources.

If you created your emission statement file from the permits or from a previous year’s file, most of the data in the Facility Information Forms should be pre-filled. Emission Statements should mirror the structure of the approved air pollution control permits. However, there are a couple of instances where the Emission Statement will need to be slightly different from the permit(s):

- You may need to add new or unpermitted sources such as maintenance shops, cafeteria ovens, laboratory hoods, site remediation and R&D facilities that have been kept outside of the main facilities' operating permit.
- Control devices that burn fuel, such as a thermal oxidizer or flare, should be reported as a piece of equipment and included in a separate operating scenario so that the amount of fuel burned by the control device may be reported.
- Similar small emissions sources can be combined for reporting on the Summary (OS0) level. See the Small Sources section below.
- VOC stationary storage tank with a floating roof needs a separate operating scenario to report roof landing emissions. If a separate operating scenario is not established in the permit, one must be created in the Emission Statement.

Permitted items which did not operate or have been decommissioned but still retain an active permit should be included in the Emission Statement.

For a complete list of SCC codes, visit: <https://sor-scc-api.epa.gov/sccwebservices/sccsearch/>

Small Sources

Insignificant pieces of equipment (such as laboratory hoods, combustion sources of the same fuel type and less than one million BTU's per hour, storage tanks of less than 2,000-gallon capacity containing VOC's and storage tanks containing only non-applicable VOC's) may be combined and reported as insignificant sources. This negates the need to report each source individually. Small combustion sources can be grouped together by the type of fuel burned but cannot be combined with other types of equipment, (e.g., two small generators burning the same fuel can be grouped with each other but not with a storage tank). AP-42, Table 1.4-1 of AP-42 has different NO_x and CO emissions factors for boilers < 0.3 MMBtu/hr than for larger boilers. Therefore, natural gas fired boilers less than < 0.3 MMBtu/hr should be separated from larger.

Differentiating Fugitive Emissions and Insignificant Sources

Fugitive emissions are emissions of an air contaminant released directly or indirectly into the atmosphere that do not pass through a stack, flue, vent, or chimney. If a source's Potential to Emit for criteria air pollutants CO, NO_x, NH₃, PM_{2.5}, PM₁₀, SO₂, TSP and VOC is less than 0.05 lbs/hr, and 2 lbs/yr for Pb, the emissions from a piece of equipment may be listed as fugitive emissions.

An insignificant source is any piece of equipment that is not a significant source (see the Glossary for the definition of significant source). An insignificant piece of equipment can have source fugitive emissions associated to it. Examples of insignificant sources include boilers less than 1 MMBTU/hr max heat input, VOC storage tanks less than 2000 gallons, and non-applicable VOC storage tanks.

Unusual Emissions Upsets and Accidents

The Emission Statement should include emissions from accidents and upsets. Report these emissions under the permitted “malfunction” operating scenario following the prescriptions of the permit. If the approved air pollution permit does not have an operating scenario nominated for malfunction, then the unusual emissions releases may be reported under the “normal” operating scenario of that particular emissions unit as fugitive emissions.

Operational Buttons

BATCH PRINT DOCUMENT – Prints the Entire Emission Statement file.

BATCH PRINT DETAILS – Prints information for the document. The Department advises against using this function because it prints superfluous information. To print just the useful information, use the printer icon on the tool bar of the section you want to print.

CALCULATE TOTALS – Adds up the emissions for all sources listed for each air pollutant. This function is available in Non-Source Fugitive Emissions and Insignificant Source Emissions screens. (Note: No emissions information is required to be entered here for Emission Statement purposes.)

CALCULATE EQUIVALENT DIAMETER – Calculates the equivalent diameter for a given dimension of a stack, even non-circular stacks. This function is in Emissions Point Inventory.

CLEAR CONTACT – Deletes the information in the Contact Information screen being viewed.

COPY – Copies the current field(s) to the next field(s).

COPY CURRENT ROW – Copies the current row to the next row.

COPY TO – Copies the current field(s) to a chosen field(s).

DELETE GROUP – Deletes a group from the Subject Item Group Inventory.

EDIT DESIGNATION – Activates the dialog box for editing the Facility Designation in the Subject Item Group Inventory.

EDIT DETAILS – Activates the dialog box for data entry of equipment specific information. The dialog box will request different data for different equipment types.

NEW GROUP – Creates a new group for combining sources in the Subject Item Group Inventory.

RENUMBER NJID – Allows the NJID number to be changed. Does not apply to operating scenario numbers.

EMISSION REPORTING FORM

GENERAL

Emissions are reported in the Emission Reporting Form.

The screenshot shows the 'General' tab of the Emission Reporting Form. The tab is labeled 'General' with a small '1.3' icon. Below the tab, there are several options with checkboxes and input fields. On the left, there are five options: 'This Source No Longer Exists (Mark For Deletion)', 'This Source Has No Reportable Emissions for 2017', 'Source Process Data Is Considered Confidential', 'Source Did Not Operate', and 'NJDEP Default Emission Calculations'. Each option has a corresponding checkbox. To the right of these options, there are two input fields: 'Associated Permit Activity #' and 'Quarterly Throughput (%)'. Below the 'Quarterly Throughput (%)' field, there are four input fields labeled 'Q1:', 'Q2:', 'Q3:', and 'Q4:'.

Select an option in the General tab if appropriate. Option “NJDEP Default Emission Calculations” should be selected if you intend to use the RADIUS Autocalculate feature (discussed in the Calculation Methodology section). The sum of the values of the quarterly throughputs Q1 + Q2 + Q3 + Q4 must equal 100% before saving.

Confidential Data

Facilities may mark certain process data as confidential (see N.J.A.C. 7:27-1.6 through N.J.A.C. 7:27-1.30). Emissions data and fuel usage cannot be marked as confidential. If a facility wishes to claim process data as confidential, they must provide two copies of the completed Emission Statement to the Department: one electronic copy with the “Source Process Data is Considered Confidential” option marked and one hard (paper) copy containing the confidential data inscribed with the word “Confidential” in bold letters on the top of each page and envelope. Do not submit a disk containing confidential information. The Department will make any data submitted on a disk or via the NJDEP Online Portal available to the public regardless of any claim of confidentiality.

PROCESS

Source Operation Information		Operating Amount		Operating Time			# of Batches Run
	Amount of Fuel Burned	Units	Hours	Days	Weeks		
Between 6/1/17 - 8/31/17		gallons ▼					
Between 12/1/16 - 2/28/17		gallons ▼					
For the Entire Year of 2017		gallons ▼					

Additional Batch Process Information

Amount per Batch (Avg)

Units

Avg Batch Run Time (Hrs)

SCC(s):

RADIUS has data validation in the 'Operating Time/Hours' column for the 'Entire Year of <year>' row. This field is located in the Emission Statement screen, Process tab. Specifically, only integer values from 0 to 8760 will be allowed in this field:

- Process data should represent the actual time a source operated
- Continuous operation is represented as 8760 hours / 365 days / 52 weeks, not 24 hours / 7 days / 52 weeks. Count one day if the equipment ran any time during a given day. Count one week if the equipment ran any time during a given week. Unless the operation is continuous, Weeks is not usually Days divided by seven.
- Use 8760 hours/year even for leap years.
- Tank operating scenarios normally report all the hours during which breathing losses occur unless separate operating scenarios exist for working and breathing losses. For tanks in constant use, please list the operating time as "8760 hours / 365 days / 52 weeks", not "24 hours / 7 days / 52 weeks."
- If the process operates less than 1 hour, 1 day or 1 week, round up to the nearest whole number.

EMISSIONS

POLLUTANT REQUIREMENTS

Air Contaminant		2017 (Tons/Yr) (1000 tons/yr for CO ₂ only) (Lbs/Yr for TAPs only)	
Name	CAS Number	Stack	Fugitive
CO		0.00	
NO _x (Total)		0.00	
Pb		0.0000	
PM-10 (Total)		0.01	
PM-2.5 (Total)			
SO ₂			
TSP			
VOC (Total)			

Reportable Pollutants

The Emissions section will be pre-populated with pollutants specific to the source type and facility type (major or minor). However, it may be necessary to add some pollutants. Refer to the table below to determine which pollutants are required. Please note: your permit may not specify which pollutants need to be reported. See N.J.A.C 7:27-21.3 for more details.

Facility-Wide Potential to Emit or Actual Emissions	Need to Report
VOC and NO _x < 25 tons AND CO, SO ₂ , NH ₃ , PM _{2.5} , PM ₁₀ , TSP and CH ₄ < 100 tons AND Pb < 5 tons	VOC, NO _x , CO, TAPs
VOC or NO _x ≥ 25 tons OR CO, SO ₂ , NH ₃ , PM _{2.5} , PM ₁₀ , TSP or CH ₄ ≥ 100 tons OR Pb ≥ 5 tons	VOC, NO _x , CO, SO ₂ , TSP, PM _{2.5} , PM ₁₀ , NH ₃ , Pb, CH ₄ , CO ₂ , TAPs

Appendix H provides a list of reportable Toxic Air Pollutants (TAPs) and the respective reporting thresholds. A TAP should be reported for all emissions sources when the facility (as a whole) has a Potential to Emit that is equal to or greater than the respective threshold in Appendix H. Some TAPs may be required to be included in an Emission Statement even if not listed in an APC Permit. Please see N.J.A.C 7:27-21.3(b) for the complete details.

Exempt Compounds

Compounds with negligible photochemical reactivity, exempt from the definition of VOC in 40 CFR 51.100(s), should not be reported in the Emission Statement as VOC. Some of these compounds may need to be reported as PM_{2.5}, PM₁₀, or TSP. For the purposes of Emission Statement reporting only, the definition of VOC can be simplified to include those organic compounds (not exempted as VOC's in 40CFR 51.100(s)) that are a liquid or a gas at standard temperature and pressure, or solids that sublime to a gas at standard temperature and pressure. Do not confuse these compounds with "non-applicable VOC's." Non-applicable VOC's are certain low vapor pressure organic liquid compounds that may need to be incorporated into the VOC emissions estimate. Please see the Glossary for the definition of non-applicable VOC.

Particulate Reporting

PM₁₀ and PM_{2.5} must include the sum of filterables and condensables. Often, emissions factors standards separate filterables and condensables. TSP should include only filterable emissions, to agree with most current stack test protocols. For material dust, TSP is generally greater than PM₁₀, which is generally greater than PM_{2.5}. Please see AP-42 for estimates. PM₁₀ includes particulates less than 2.5 microns; therefore PM₁₀ emissions should never be less than PM_{2.5} emissions.

Differentiating Air Contaminants

When using emissions factors or other methods of calculating and estimating emissions, separating the portion of one air contaminant that belongs to a subset of another air contaminant may not be practical. For example, AP-42 contains emissions factors for VOC and TSP. A portion of the TSP emitted may also be a VOC. The quantity of TSP that is also a VOC would be difficult to figure out from the emissions factor or from the documentation in AP-42. For simplicity reasons, one does not need to differentiate (and subtract) one air contaminant from another. Report each air contaminant by its category (i.e., VOC, CO, NO_x, NH₃, TSP, PM₁₀, PM_{2.5}, SO₂, or Pb) and do not subtract one air contaminant from another air contaminant (e.g., TSP minus PM₁₀, TSP minus VOC). If a TAP is a VOC, do not subtract the amount of that TAP from the VOC total. In particular, formaldehyde is frequently measured and itemized separately from VOC (often in stack tests). VOC emissions should be adjusted to incorporate formaldehyde levels.

Source Level Reporting

Refer to the table below to distinguish between pollutants which must be reported at both the operating scenario level (OS) and facility level (FC) and pollutants which may be reported at the facility level only.

Report at Facility Level and Source Level	CO, NO _x , VOC, SO ₂ , TSP, PM _{2.5} , PM ₁₀ , NH ₃ , Pb, CH ₄
Can be Reported at Facility Level Only	CO ₂ , TAPs

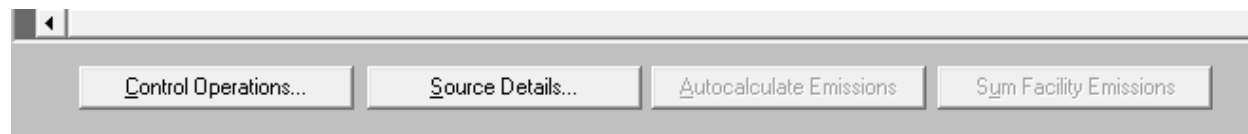
Seasonal Reporting and Reporting Units

CO, NO_x and VOC require seasonal reporting. Calculate the lb/day for the ozone season as per EPA guidance (total seasonal emissions divided by total amount of operating days). RADIUS automatically calculates a value for the NO_x (Total) tons/season fields for batch processes. This value is calculated by multiplying the currently calculated NO_x annual total by 5/12, (for the five months May through September). Refer to the table below to determine the appropriate units and seasonal reporting requirements for each pollutant. For Pb, SO₂, TSP, PM₁₀, PM_{2.5}, NH₃, CO₂, CH₄, and TAPs, only the annual emissions (tons/year) should be reported.

Pollutant	Annual (1/1-12/31) Unit	Ozone Season (5/1-9/30) Unit	Peak Ozone Season (6/1-8/31) Unit	Carbon Monoxide Season (12/1- 2/28) Unit
CO	Tons/Year		Pounds/Day	Pounds/Day
NO _x	Tons/Year	Tons/Season	Pounds/Day	
VOC	Tons/Year		Pounds/Day	
SO ₂ , TSP, PM _{2.5} , PM ₁₀ , NH ₃ , Pb*, CH ₄	Tons/Year			
CO ₂	1000 Tons/Year			
TAPs	Pounds/Year			

*Please Note: Pb emissions must be reported in tons not pounds.

Operational Buttons



CONTROL OPERATIONS – Activates the dialog box for reporting control device efficiency (see section on Control Device Efficiencies). If the source has more than one control device, the total combined efficiencies are reported.

SOURCE DETAILS – Activates the dialog box for data entry of equipment specific information. This information is required for combustion sources, VOC storage vessels, and surface coating/graphic arts processes. The dialog box will request different data for different equipment types.

AUTOCALCULATE EMISSIONS – Activates the Autocalculate feature (discussed more thoroughly in the Calculation Methodology section).

SUM FACILITY EMISSIONS – Sums up all the emissions by air contaminant for the entire Emission Statement of the facility in the FC page. It should be activated immediately before submittal to ensure proper summation in the FC page.

CALCULATION METHODOLOGY

Ranking of Methodologies

Emission statements should report an accurate estimate of actual emissions and not a summary of the permitted limits or an exaggeration. Follow the instructions provided in N.J.A.C. 7:27-21.6 when choosing a calculation methodology. The Department is not mandating the institution of a higher-ranked methodology for the Emission Statement; facilities are only required to use the higher-ranked methodology when it is reasonably available. However, N.J.A.C. 7:27-21.6 lists several instances where a lower-ranked methodology can or must be used. The table below relates the N.J.A.C. 7:27-21.6 ranking system to the Calculation Methodology Codes available in RADIUS.

N.J.A.C Rank	RADIUS Calculation Methodology Code
1	Continuous Emissions Monitoring
2	Predictive Emissions Monitoring
3	Agency approved and supervised source testing
4	Agency approved and supervised source testing (previous year)
5	Material balance using engineering knowledge of the process
6	<ul style="list-style-type: none">· AP-42· EPA computer program based on other approved emission factor· State or local agency's emission factor· Emissions to be computer calculated by NJDEP or EPA based on standard emission factor (SCC emission factor file)
7	Manufacturer's Estimate or Data
8	<ul style="list-style-type: none">· Best engineering judgement· Industry council or organization emission factor· Estimated at one ton per year (0.1 ton per year for Pb) for any unpermitted source

Use "EPA computer program based on other approved emissions factor" (Rank 6) for programs such as the following:

WATER9 – this program estimates emissions from the equalization and aeration basins at wastewater treatment systems

https://www3.epa.gov/ttnchie1/software/water/water9_3/index.html

LandGEM – this programs provides a landfill gas emissions model

<https://www3.epa.gov/ttn/catc/dir1/landgem-v302-guide.pdf>

WebFIRE – this program contains an internal repository of all available emissions factors and a distribution system containing any available emissions factors

<https://cfpub.epa.gov/webfire/>

EIIP – the Air Emissions Inventory Improvement Program

<https://www.epa.gov/air-emissions-inventories/air-emissions-inventory-improvement-program-eiip>

Use “Best Engineering Judgement” (Rank 8) for:

- NO_x RACT tune-up data
- Department supervised and approved stack tests belonging to a different unit
- Use of permitted limits as emissions factors for sources that do not meet the simplified reporting specifications of N.J.A.C. 7:27-21.5(g)

Use “Industry council or organization emission factor” (Rank 8) for extra-agency resources such as the periodical and journals found in Appendix A.2.

Use “Potential emissions are less than one ton per year (0.1 ton per year for Pb) and use the emission rate from the current and approved air pollution permit and certificate to operate” when utilizing the simplified reporting option discussed in N.J.A.C. 7:27-21.5(g).

RADIUS Autocalculate Feature

Facilities may use the Autocalculate function in RADIUS to calculate emissions from boilers. This is available for both insignificant and significant sources. Because of the high variation in fuel types, RADIUS Autocalculate can only be used for specific fuel types and firing methods. The calculation routines used in RADIUS are based on AP-42. RADIUS can also calculate emissions from surface coating and printing equipment, as long as the VOC content of coating is provided.

When using the Autocalculate function for boilers, RADIUS does not calculate the NO_x emissions for the 5/1-9/30 time period (tons/season), except for Batch Processes. You will have to calculate these emissions manually.

To use the Autocalculate feature, select the “NJDEP Default Emission Calculations” option in the General tab. Complete the Process information and the Source Details screen for the operating scenario. Then press the Autocalculate Emissions button at the bottom of the screen.

Stack Testing

If a facility has stack testing results showing emissions from a source, the facility should apportion those emissions into the reported emissions values using actual process rates. For example, if stack testing was performed under a certain load then those results should be used for the period of the year that the source operated under that load. If available, another emissions factor or stack test result should be used for the period of time the source operated under the alternative operating loads. Conversely, a facility may use the stack test results without modification if it believes, using good engineering judgement, that those results are an accurate representation of the emissions during all operations.

In some cases, the emissions from a facility or group of sources may have been determined at the stack level rather than at the equipment level. It may be difficult to determine the exact quantity of air contaminants that were emitted from each individual piece of equipment. In these cases, total

emissions from a stack may be split between equipment based upon the size of the units, how the units actually operated, or a combination of the two. For facilities that have accurate fuel monitoring methods for each unit, emissions may be apportioned by the BTU content of the fuel used in the unit and the total amount of BTU's generated by the unit. In more complex situations, other additional factors such as permitted emissions rates and VOC content of the coating could be used.

The most important thing to remember when apportioning emissions between units is to not double count emissions. If two operating sources lead to one stack with a CEM, never report the total emissions as recorded by the CEM as the total emissions for each individual source. When the emissions from all operating scenarios are totaled, it should accurately reflect the facility-wide total emissions.

Formaldehyde is sometimes measured and itemized separately from VOC in stack tests. VOC emissions should be adjusted to incorporate formaldehyde levels.

CONTROL DEVICE EFFICIENCIES

Activate the Control Operations screen by selecting the Control Operations button in the lower left-hand corner of the screen.

Emission Statement - Control Operations...

Facility: 00000 NJDEP

Pollutant	Control Device			Operating Time (%)	Capture Efficiency (%)	Removal Efficiency (%)	Overall Control Efficiency (%)	Design Efficiency Used?
	ID	Type	P/S/T					
CO	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
NOx (Total)	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
Pb	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
PM-10 (Total)	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
PM-2.5 (Total)	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
SO2	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
TSP	CD1	Oxidizer (Thermal)	P	100.00	50.000	0.000	0.000	Yes
VOC (Total)	CD1	Oxidizer (Thermal)	P	100.00	50.000	98.000	49.000	Yes

OK Cancel

The State is required to adjust reported emissions estimates to account for variability in the operation and use of control devices. This adjustment, called Rule Effectiveness by EPA, assumes that control devices do not always operate at 100% of their efficiency. Accurate data on control device efficiency is essential to applying the correct adjustment factor to New Jersey's inventory of air contaminants.

Overall control efficiency is calculated as:

$$\text{Overall Control Efficiency (\%)} = \text{Operating Time (\%)} \times \text{Capture Efficiency (\%)} \times \text{Removal Efficiency (\%)}$$

Operating Time

Operating time is the ratio of time the control device operated compared to the emission source. For example, if a device operated half the time while emissions were being generated, then the operating time is 50%.

Capture Efficiency

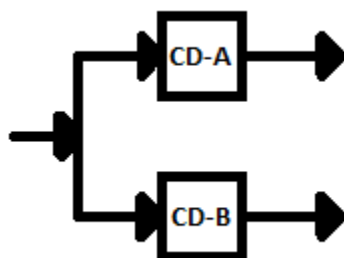
The capture efficiency is the percentage of air stream that is processed by the control device. For example, if a control device captures half the emissions stream because the stream's other half is diverted elsewhere then the capture efficiency is 50%.

Series: Control devices are considered in series when one control device is directly downstream of another device. For example, two control devices are directly connected and the first one, A, has a capture efficiency of 100%, this means that it processes all the emissions from the source. If the second device, B, also has a capture efficiency of 100%, then the control device B processes all the

air contaminants not removed by the control device A.



Parallel: Control devices are considered parallel when part of the emissions stream is diverted to two or more control devices simultaneously. For example, if a source with two parallel control devices has 75% of the exhaust directed to control device A, then 25% are directed to control device B. The capture efficiencies are 75% for control device A and 25% for control device B.



Removal Efficiency

The removal efficiency of a device considers the elimination of the air contaminant from the emissions stream that the device processes. When calculating the removal efficiency of a device, one must consider the age and loss of effectiveness of the device. For example, if a control device is 90% effective but, in a linear fashion, reaches 40% effectiveness, and operates continuously, the reportable removal efficiency is 65%.

Design Efficiency

Please note that a check box has been added to each form to indicate if the design efficiency of the air pollution control device is being reported. Please enter "Yes" in this box if, 1) the operating time of the control device was assumed to be 100% of the time, 2) the capture efficiency of the device was assumed to be 100%, and 3) the manufacturer's design efficiency is being reported. If you are reporting emissions based upon a continuous emissions monitoring, please do not check this box. Facilities should make every effort to report the actual operating efficiency rather than the design efficiency. This would avoid the conservative Rule Effectiveness application triggered when the design efficiency is used.

SOURCE DETAILS

Activate the Source Details screen by selecting the Source Details button in the lower left-hand corner of the screen.

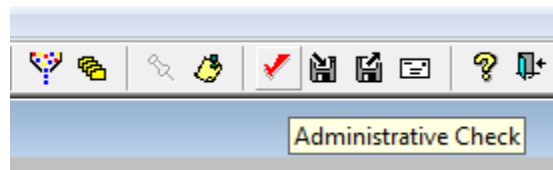
The screenshot shows a software window titled "Emission Statement - Fuel Combustion Details...". At the top, it displays "Facility: 00000 NJDEP". Below this is a section titled "Fuel Combustion Parameters" which contains four input fields: "Maximum Gross Heat Input (MMBtu/Hr):", "Fuel Firing Method:", "Fuel Type:" (with a dropdown menu showing "Natural gas" selected), and "Sulfur Content (%):". At the bottom of the window are two buttons: "OK" and "Cancel".

Source Details are required for combustion sources. Fuel suppliers have generally decreased the amount of sulfur in diesel, #2 fuel oil and other fuel oils. Use the sulfur content from the vendor's SDS, rather than the limits in your permit. Report VOC content of coating/ink/solution for coating/printing operations. If a variety of solutions are used, report the weighted average of the VOC content, not the largest value.

PREPARING FILE FOR SUBMISSION

RADIUS Administrative Check

RADIUS has a built-in "completeness" check function which can be accessed by selecting the "check-mark" icon on the menu bar.



There are three designations for incomplete data: Error, Warning and Note. "Error" indicates that an important data element is missing and must be corrected before submission. "Warning" and "Note" indicate missing or incorrect data that should be reviewed but do not inhibit submission.

Creating an Emission Statement Submittal File

Use the File>Submit function to create a "Submit" file. This is the only file type accepted for Emission Statement submittals. The "Submit" function does not automatically send the electronic file to the Department. See the Certification and Submission section for more details.

Accessing a Submittal File

To import a "Submit" file into RADIUS:

1. Change the file extension to .zip
2. Open the .zip file and browse through folders RADIUS>Export>
3. Extract the file out of the .zip folder and import into RADIUS

Locked Files

Use the File>Lock/Unlock function to unlock a locked "Submit" file in RADIUS for further editing.

CERTIFICATION AND SUBMISSION

Emission Statements may be submitted through postal mail or online.

Postal Submission

Include a completed hard copy of the certification form found in Appendix E along with a CD-ROM or other department approved electronic media containing the RADIUS “submit” file. For security reasons, USB flash drives are not accepted. A minimum of 2 certifications are required (1 Individual with Direct Knowledge and 1 Responsible Official), however, all persons who completed or assisted in completing the Emission Statement forms should certify. Emission Statements submitted through the mail without a signed Certification Form will be considered incomplete. Supporting calculations (optional) can be included as a hard copy or on a disk.

Online Submission

Submit the RADIUS “submit” file online using the NJDEP Online Portal: <https://dep.nj.gov/online/>. Emission Statements submitted through the NJDEP Online Service Portal must be certified online. A minimum of 2 certifications are required (1 Individual with Direct Knowledge and 1 Responsible Official), however, all persons who completed or assisted in completing the Emission Statement forms should certify. Online submittals that do not reach the “Submission Confirmation” screen will be considered incomplete. Supporting calculations (optional) can be attached in the NJDEP Online Portal. Emission Statements cannot be submitted via e-mail. The portal can accommodate a maximum RADIUS file size of 5 mb; RADIUS files larger than 5 mb must be submitted via postal mail.

Any major facility wanting to submit an Emission Statement through the NJDEP Online Portal must first have the Individual/s with Direct Knowledge and Responsible Official/s complete and mail/fax in a RADIUS Certification Authorization Form (RCAF):

<https://dep.nj.gov/wp-content/uploads/boss/applications-and-forms/rcaf.pdf>

The RCAF is not required for minor facilities.

A step-by-step guide to submitting an Emission Statement using the NJDEP Online Portal can be found here:

<https://dep.nj.gov/wp-content/uploads/boss/applications-and-forms/user-guide-for-online-radius-submittals.pdf>

Roof Landing Loss Report

Facilities with VOC stationary storage tank with a floating roof are required to submit a Floating Roof Landing Emission Summary Report with the Emission Statement. See N.J.A.C. 7:27-21.5(j) for more details.

ENFORCEABILITY

It is the facility's obligation to contact the Department electronically or in writing to obtain reporting software, guidance or any materials necessary for Emission Statement reporting and to determine applicability. The Department does not accept any responsibility for any facility's failure to provide a complete and certified Emission Statement by the reporting date. The Department is under no obligation to provide reporting materials, calculations or notifications. These are provided strictly as a courtesy.

Acceptance or receipt of an Emission Statement by the Department does not constitute the Department's acceptance of the truth, accuracy, or completeness of the Emission Statement. The Department's failure to act on the information contained in an Emission Statement at the time of receipt does not bar the Department from any future action based on that information (N.J.A.C. 7:27-21.3(g)). Any emissions estimates made by the Department (or made by using the computer tools provided by the Department) are based solely upon information supplied by the facility; accuracy of the estimates remains the sole responsibility of the facility.

Once the Department has determined an Emission Statement to be administratively complete, the Department may review the contents to ensure that accurate data has been provided. A facility may be asked to confirm that the contents or information provided were according to Department regulations, or to provide supporting information. An on-site inspection may occur or a letter may be sent, to ascertain compliance with the reporting and certification requirements of the Emission Statement regulations. Facilities are reminded that a copy of the Emission Statement and any record of justification for the estimates provided by the Emission Statement must be retained for a period of five years from the submission due date of the Emission Statement (see N.J.A.C. 7:27-21.7 for exact record-keeping requirements).

Emission statement submission is required in N.J.S.A. 13:1B-3, 13:1D-9, and 26:2C-1 et seq., in particular N.J.S.A. 26:2C-9 and 19. If a facility fails to comply, it may be subject to enforcement actions according to N.J.S.A. 26:2C-19, N.J.A.C. 7:27-21, and N.J.A.C. 7:27A-3.1 et seq.

Data submitted to the Department via disk or upload through the NJDEP Online Portal is not kept confidential.

GLOSSARY

The following words and terms, when used in this document, have the following meanings, unless the use of the word in its context clearly suggests otherwise.

"AP-42" means the EPA document "Compilation of Air Pollutant Emissions Factors". It is available from the EPA website at <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors>

"Batch process" means the method of permitting that describes manufacturing operations (normally related to the chemical or pharmaceutical industries) that involves multiple components and multiple manufacturing operations. Continuity of the flow of raw materials into and the flow of products from production equipment primarily differentiates an emissions unit process from a batch process. Batch processes occur when raw material input and product removal does not occur simultaneously.

"Batch run time" means the total elapsed time per batch from the start of adding raw materials to the completion of the reaction or process. This excludes time waiting for removal of batch product from a vessel. This exclusion is consistent with "batch cycle time" in N.J.A.C. 7:27-16. Because the Department will allow the grouping of similar batches, the batch run time is reported as an average time of the batches that may have been grouped together.

"Capture efficiency" means the amount of an air contaminant collected by a control apparatus serving the source operation, expressed as a percentage of the total amount of the air contaminant emitted by the source operation.

"Carbon monoxide season" means December 1 through the last day of February, inclusive. Please note that the last day of February differs in a leap year.

"CAS number" means the Chemical Abstract Service number of a chemical compound or mixture. The CAS number can be acquired from the facility's Safety Data Sheets (SDS). The CAS number is important information because of the several systems of organic compound nomenclature that have survived over the years. The chemical abstract numbers are surrogate means by which the Department assures the proper identity of reported information, particularly in light of some use of "common" names or trade names in addition to the various systems.

"Control efficiency" means the amount of air contaminant prevented from being discharged into the outdoor atmosphere by a control apparatus, expressed as a percentage of the total amount of the air contaminant collected by the control apparatus.

"DEP" or "the Department" means the New Jersey Department of Environmental Protection.

"Emissions unit" means the permitting method that describes one or more significant component operations. Stand-alone equipment can make up an emissions unit. Making collective data presentation easier to understand, pieces of equipment with physical commonalities such as common exhaust systems may constitute an emissions unit. An emissions unit process is

more likely to be a continuous operation, where raw materials enter production equipment as product is removed from it. Each piece of equipment may only appear in one emissions unit.

"Emission Year" means the reporting year. It is the year in which emissions actually occurred.

"EPA" means the United States Environmental Protection Agency.

"Equipment" means any device capable of causing the emissions of an air contaminant either directly or indirectly to the outdoor atmosphere, and any stack or chimney, conduit, flue, duct, vent, or similar device connected or attached to, or serving the equipment. This term includes, but is not limited to, a device in which the preponderance of the air contaminants emitted is caused by a manufacturing process.

"Facility" means the combination of all structures, buildings, equipment, control apparatus, storage tanks, source operations, and other operations located on a single site or on contiguous or adjacent sites and that are under common control of the same person or persons.

"Federally enforceable" means any limitation or condition on operation, production, or emissions that can be enforced by the EPA pursuant to authorities that include, but are not limited to, those established in rule, regulation, or permit.

"Firing Method" means the manner on how equipment introduces fuel into the area where it is burned and is an indication of the type of equipment (e.g., diesel engine, pulverized coal - wet bottom, an asphalt plant burner or conventional wall fired equipment). It is not about how the fuel is ignited e.g., electrodes for fuel oil, pilot light for gas.

"Fugitive emissions" means any air contaminant emissions released directly or indirectly into the outdoor atmosphere which cannot reasonably pass through a stack or chimney.

"Graphic arts operation" means the application of one or more surface coating formulations across portions of a surface using one or more rotogravure or flexographic printers used to produce published material and packaging for commercial or industrial purposes, or any rotogravure or flexographic printers used to produce vinyl or urethane coated fabric or sheets, or any sheet fed gravure, screen printing, or fabric printing operations together with any associated drying or curing areas. A single graphic arts operation ends after drying or curing and before other surface coating formulations are applied. For any web line, this term means an entire application system, including any associated drying ovens, or areas between the supply roll and take-up roll or folder.

"Grandfathered" means, in reference to equipment or control apparatus, that construction, reconstruction, or modification occurred prior to the enactment of N.J.S.A. 26:2C-9.2 on June 15, 1967, or prior to the subsequent applicable revisions to rules and regulations codified at N.J.A.C. 7:27-8 that occurred March 5, 1973, June 1, 1976, April 5, 1985, and October 31, 1994, and no construction, reconstruction, or modification of the equipment or control apparatus has occurred since. Grandfathered equipment must be reported in an Emission Statement.

"Incinerator" means any device, apparatus, equipment, or structure using combustion or pyrolysis for destroying, reducing, or salvaging any material or substance, but does not include thermal or catalytic oxidizers used as control apparatus on manufacturing equipment.

"Insignificant Source" means any piece of equipment that is below the thresholds for a significant source.

"Manufacturing process" means any action, operation or treatment embracing chemical, industrial, manufacturing or processing factors, methods or forms including, but not limited to, furnaces, kettles, ovens, converters, cupolas, kilns, crucibles, stills, dryers, roasters, crushers, grinders, mixers, reactors, regenerators, separators, filters, reboilers, columns, classifiers, screens, quenchers, cookers, digesters, towers, washers, scrubbers, mills, condensers, or absorbers.

"SDS" means Safety Data Sheet.

"NAICS" means the North American Industry Classification System Code, assigned by the United States Office of Management and Budget, which classifies establishments according to the type of economic activity in which they are engaged.

"N.J.A.C." means New Jersey Administrative Code.

"NJDEP Online Portal" is DEP's Business Portal allowing for RADIUS submissions, permits and other regulated documents to be submitted to the Department, and accessed through [NJDEP | DEP Online | DEP Online-Business Portal](#).

"Non-Applicable VOC" means a VOC that has a vapor pressure (or, if a mixture, the sum of its partial pressures) of less than 0.02 pounds per square inch absolute (psia). For the purposes of Emission Statement reporting, this term is **only** applicable to deciding if several VOC storage tanks can be reported on one form as a group or if each VOC storage tank needs to be reported individually. Non-Applicable VOCs are not necessarily exempt from reporting in the emission statement.

"NSPS" means New Source Performance Standards.

"NTIS" means the National Technical Information Services.

"Operating permit" means a permit issued by the Department pursuant to N.J.A.C. 7:27-22 to authorize the use of one or more source operations from which air contaminants may be emitted.

"Operating scenario" means a plan for operating a facility or a portion thereof in a way, or according to a method, or using methods or processes, which are different from other methods or processes used at the facility, or portion thereof. An operating scenario may be incorporated into a permit through issuance of an initial operating permit, minor modification, significant modification, or authorized through a seven-day-notice.

"Order" means any and all orders issued by the New Jersey Department of Environmental

Protection including, but not limited to, Administrative Orders and Administrative Consent Orders. This term is pertinent only to the definition of federally enforceable.

“Overall control device efficiency” means the percentage of the air contaminant removed from the entire air stream (i.e., the emissions) from a source by a control apparatus that is prevented from being discharged into the outdoor atmosphere. The overall control efficiency is the product of the operating time, the capture efficiency, and the removal efficiency. For more details, see the section in this Guidance Document titled “Estimating The Overall Efficiency of Emissions Control Devices”.

“Ozone Season” means May 1 through September 30, inclusive. Also see “Peak ozone season”.

“Peak ozone season” means June 1 through August 31, inclusive.

“Percent quarterly throughput” means the percentage of the total 12-month operating activity that occurs during each of the following periods:

- Q1)** January 1 through March 31
- Q2)** April 1 through June 30
- Q3)** July 1 through September 30
- Q4)** October 1 through December 31

Percent quarterly throughput, denoted as Q1, Q2, Q3 and Q4, should be updated to reflect the calendar year quarters. This change does not affect the need to report daily estimates of CO emissions using data (e.g., fuel use) from the prior calendar year. Daily estimates of CO emissions must be based on actual data obtained from December of the prior year and January and February of the reporting year.

“Permit” means any permit issued pursuant to the requirements established under the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., or N.J.A.C. 7:27-1 et seq., except to the extent that the permit includes any prohibition established solely pursuant to N.J.A.C. 7:27-8.8(f).

“Potential-to-Emit” means the maximum aggregate capacity of a source operation or of a facility to emit an air contaminant under its physical or operational design. Any physical or operational limitation on the capacity of a source operation or a facility to emit an air contaminant, including control apparatus, and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is federally enforceable. Fugitive emissions shall be included in the determination of potential-to-emit. However, the determination shall not include any banked emissions reductions held by the owner or operator.

“Predictive Emissions Monitoring” means the method to predict the emissions rate using EPA Performance Specification 16, Specifications and Test Procedures for Predictive Emission Monitoring Systems in Stationary Sources. Predictive Emission Monitoring Systems (PEMS) utilize advanced mathematical models to provide reliable and accurate real-time emission estimations using process parameters (e.g. pressure, temperatures, flow, etc.) as input variables.

"Product" means the output from a source operation, equipment, or control apparatus. Such outputs may include mixtures, composites, compounds and elemental substances. "Product" may be MMBtu for an institutional boiler or kWh for a generator.

"Raw material" means any input to equipment, control apparatus, or a source operation, including fuels, but excluding heat and other forms of energy. Such inputs may include mixtures, composites, compounds and elemental substances.

"Reporting Year" means the calendar year during which emissions reported in an Emission Statement were emitted, except that carbon monoxide emissions emitted in December of the preceding calendar year shall also be reported as part of the peak carbon monoxide season emissions in a given year.

"Responsible Official" means one of the following:

- (1) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars);
 - (ii) the delegation of authority to such representative is approved in advance by the Department
- (2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (3) For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive having responsibility for the overall operations of a principal geographic unity of the agency (e.g., a regional administrator of the EPA); or
- (4) For affected sources under Title IV of the Clean Air Act:
 - (i) the designated representative as far as actions, standards, requirements, or prohibitions under Title IV of the Clean Air Act or the regulations promulgated thereunder are concerned; and
 - (ii) the designated representative for any other purposes under 40 CFR part 70.

"SCC" means Standard Classification Code as established by the EPA.

"Significant equipment or source operation" means one of the following:

(1) In respect to a source operation at a facility which is subject to the operating permit requirements of N.J.A.C. 7:27-22, this term has the meaning defined for the same term at N.J.A.C. 7:27-22.1;

(2) Otherwise, this term has the meaning defined for the same term at N.J.A.C. 7:27-8.1, except that for the purposes the emission statement, no source operation shall be excluded from being classified as a significant source operation solely because it is a grandfathered source. That is, even though for the purposes of N.J.A.C. 7:27-8, a source operation would be excluded from being classified as a significant source operation if it meets the following three criteria, it is not so excluded for the purposes of the emission statement:

(i) The source operation was in operation prior to the date that source operations of its kind were subject to permit requirements under N.J.A.C. 7:27-8;

(ii) The source operation has not been reconstructed or modified since that date referenced in 2i above; and

(iii) The source operation is still operable.

“Submittal year” means the calendar year in which an Emission Statement is required to be submitted. This term may be contrasted with the term “reporting year,” defined above, which is the temporal period during which the emissions that are reported in an Emission Statement are emitted.

“Surface coating operation” means the application of one or more surface coating formulations across an entire surface, using one or more coating applications, together with any associated drying or curing areas. A single surface coating operation ends after drying or curing and before other surface coating formulations are applied. For any web coating line, this term means an entire coating application system, including any associated drying ovens, or areas between the supply roll and take-up roll, that is used to apply surface coating formulations onto a continuous strip or web.

“Title V” means the operating permit required by N.J.A.C. 7:27-22 for major facilities.

“Toxic Air Pollutant” means any of the substances listed in N.J.A.C. 7:27:21, Appendix 1, Table 1 or Table 3, (Do not confuse Toxic Air Pollutants with TXS (Toxic Substances) from N.J.A.C. 7:27-17.)

APPENDIX A: BIBLIOGRAPHY

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Development of size-Specific Data from Particulate Control Technology Research Reports, Final Report, PB93-131456/HDM, EPA/600/R-92/214, November 1992.

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1989.

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APPENDIX B: EXEMPT SOURCES

Combustion emissions inventoried within the Off-Highway and Equipment programs should not be duplicated on the Emission Statement. Examples are listed below. Non-combustion emissions from these sources should be reported in the Emission Statement, e.g., particulate emissions from crushing/processing equipment or VOC leaks from pump seals or compressors.

Light Commercial Equipment

Generator Sets < 50 HP	Gas Compressors < 50 HP
Pumps < 50 HP	Welders < 50 HP
Air Compressors < 50 HP	Pressure Washers < 50 HP

Industrial Equipment

Aerial Lifts	Other General Industrial Equipment
Forklifts	Other Material Handling Equipment
Sweeper Scrubbers	

Construction Equipment

Asphalt Pavers	Trenchers	Rough Terrain Forklifts
Tampers/Rammers	Bore/Drill Rigs	Rubber Tire Loaders
Plate Compactors	Excavators	Rubber Tire Dozers
Concrete Pavers	Concrete/Industrial Saws	Tractors/Loaders/Backhoes
Rollers	Cement and Mortar Mixers	Crawler Tractors
Scrapers	Cranes	Skid Steer Loaders
Paving Equipment	Graders	Off-Highway Tractors
Surfacing Equipment	Off-Highway Trucks	Dumpers/ Tenders
Signal Boards	Crushing/Processing Equipment	Other Construction Equipment

Agricultural Equipment

2-Wheel Tractors	Balers
Agricultural Tractors	Tillers
Agricultural Mowers	Swathers
Combines	Hydro Power Units
Sprayers	Other Agricultural Equipment

Chainsaws/Shredders/Fellers

Chain Saws	Shredders
Fellers/Bunchers	Skidders

Unless contained in an approved air pollution permit, the following sources also should not be included in a facility's Emission Statement:

- Fuel burning sources for residential heating of duplex or single residence dwellings;
- Fuel oil tanks for residential heating of duplex or single residence dwellings;
- Pressurized tanks, e.g., propane or LPG;
- Delivery vessels, e.g., 55 gallon drums; and

APPENDIX C: LABORATORY HOODS

A Working Group of the Research & Development Council of New Jersey provides the following guidance for reporting fugitive emissions from laboratory hoods, based on a consensus of estimating techniques rather than experimental data. Use of the proposed calculation methods is limited to Emission Statement requirements (N.J.A.C. 7:27-21) and is not intended for establishing regulatory limits.

- 1. Hood Emissions Factors** - Analysis of the emissions data reported from 17 of the largest R&D facilities in the State, including an evaluation of organic chemical usage, vapor pressure, and nature of operations in the hoods provides the following emissions factors. The database used to develop these factors had 60% of the laboratories in the Low VOC Usage Group and 20% in each of the other groups. Although not unanimous, the Working Group was overwhelmingly in favor of prescribing these emissions factors as most reasonable. Most laboratories do not have nor could they quantify the resources for constant data collection and analysis required for a more technically sophisticated approach.

Group	VOC Usage	Emissions Factor
Group I	Heavy VOC Usage (Petroleum, Petrochemical, Pharmaceutical, etc.)	30 lbs/yr/hood
Group II	Medium VOC Usage (Flavors/Fragrances, Biotechnology, and Adhesive)	15 lbs/yr/hood
Group III	Low VOC Usage (Electronics, Semiconductors, and Polymers)	5 lbs/yr/hood

- 2. Purchase Volumes Multiplied by Loss Factor** - For facilities where operations are reasonably constant and predictable, a calculation based on purchased materials times a constant loss factor would be acceptable.
- 3. Mass Balance** - Facilities having accurate records of purchased solvents and wastewater composition estimate using a difference calculation.
- 4. Displacement Calculation** - Facility management may calculate losses to emissions based on accurate purchase records and estimating the volume displacement of transferring solvents from one type of container to another, using the Ideal Gas Law and assuming the air displaced is saturated with solvents.
- 5. Stack Measurements** - Conduct stack gas analyses of all or a representative number of hoods at the facility. Measurements conducted in the stack should include those methods, which the facility management believes are technically reasonable...

Facility managers who feel that none of the above estimating methods are suitable for their facility have the prerogative to propose methodologies unique to their situation.

APPENDIX D: LEAD EMISSIONS FACTORS

These Emissions Factors Are for Emission Statement Reporting Only

The purpose of this appendix is to provide some general guidance on estimating the emissions of lead from fuel combustion sources. These emissions factors should not be used for determining compliance with any order, rule, or regulation of the Department or for specific air pollution control permitting situations. Note that lead is reported as elemental lead, rather than the total weight of lead compounds. These emissions factors should only be used if no superior methodology is available.

Fuel Type and Source

1. Residual oil (#4, #5 or #6) – For all uncontrolled boilers

0.0042 lbs/Mgals. This assumes a 150,000 Btu/Gal fuel heating value.

2. Distillate oil (#2), kerosene, and similar fuels – For all uncontrolled internal and external combustion engines

0.0013 lbs/Mgals. This assumes a 141,000 Btu/Gal fuel heating value.

3. Natural gas – For all controlled and uncontrolled internal combustion sources

0.00 lbs/mmscf

4. Bituminous coal – With pulverized coal-fired utility boilers with ESP control

Use equation:

$$EF_{Pb} = \frac{(C_{Pb})_c}{H_c} * f(1 - E) * ER_{Pb} * 10^6$$

Where:

EF_{Pb} = emissions factor for lead, pg/J

H_c = higher heating value of coal, kJ/kg

E = fractional particulate collection efficiency of control device

ER_{Pb} = enrichment factor for lead

(C_{Pb})_c = concentration of lead in coal, ppm

f = fraction of coal ash as fly ash. Use a fly ash fraction of 0.80 for dry bottom, .65 for wet bottom

Fuel Specific Units: Multiply derived factor (lb/10¹² Btu) by the heating value of coal (Btu/lb) and by 2,000 (lb/ton) to calculate factor (lb/ton). For example, (74 lb Pb/10¹² Btu)(13,077 Btu/lb)(2000 lb/ton) = 0.0019 lb/ton.

APPENDIX E: CERTIFICATION FORM

New Jersey Department of Environmental Protection Certification Form for the _____ Emission Statement

Company Name _____ Facility ID _____

1. **Responsible Official** – This first tier of this certification is to be signed by a Responsible Official as defined in N.J.A.C. 7:27-1.

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document and, based on my inquiry of those officials immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I certify that, based on my inquiry of those officials immediately responsible for obtaining the information, I believe that any estimates are the result of good faith application of sound professional judgement, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Name (type or print) _____ Title _____

Signature _____ Date _____

2. **Individuals with direct knowledge** – This second tier of certification is to be signed by the individual or individuals with direct knowledge and/or responsibility for the information contained in the attached spreadsheet. Please use a copy of this form if you need to have this certified by more than two individuals.

“I certify under penalty of law that I believe the information provided in this document is true, accurate, and complete. For those portions of the document that are based on estimates, those estimates are the result of good faith application of sound professional judgement, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Name (type or print) _____ Title _____

Signature _____ Date _____

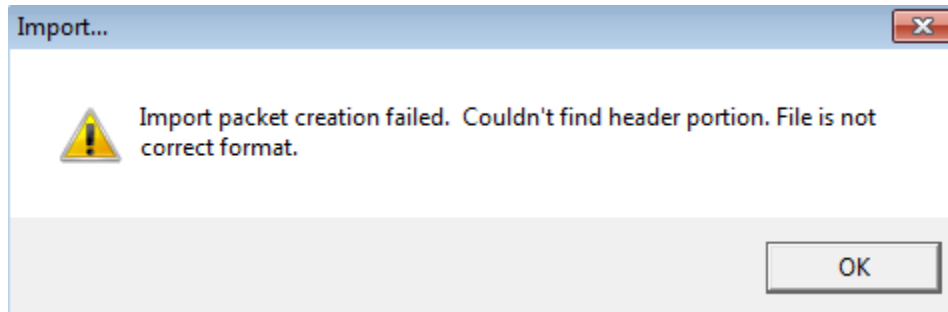
“I certify under penalty of law that I believe the information provided in this document is true, accurate, and complete. For those portions of the document that are based on estimates, those estimates are the result of good faith application of sound professional judgement, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Name (type or print) _____ Title _____

Signature _____ Date _____

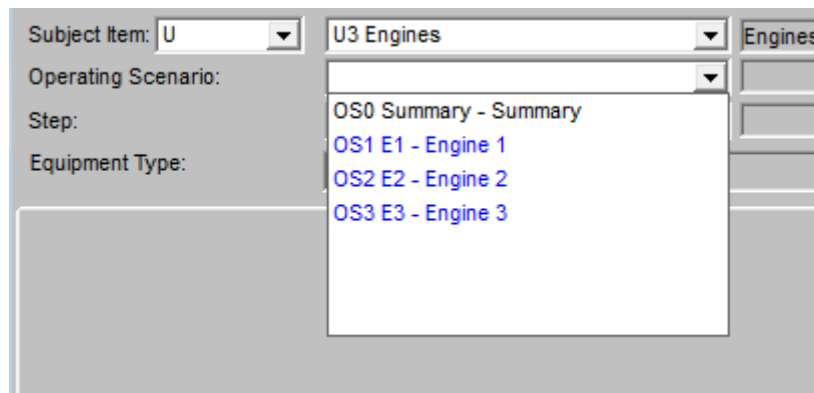
APPENDIX F: COMMON RADIUS ERRORS

1. Import packet creation failed. Couldn't find header portion. File is not correct format.



This error usually appears when attempting to upload a “Submit” file directly into RADIUS. First, change the file extension to .zip. Open up the zip folder and look through the directories Radius>Export> and you will find the importable version of the file. Copy and save this file outside of the zip folder and import into RADIUS.

2. Improper summation



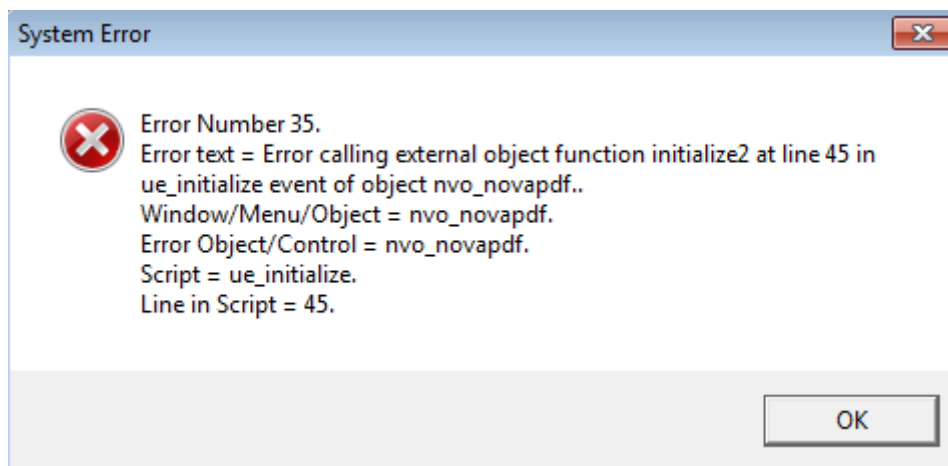
Emissions from individual operating scenarios may fail to properly sum in the summary operating scenario (OS0) and in the facility total (FC) page. When this happens, the dropdown menu will display the individual operating scenarios highlighted in blue but the summary in black (as shown above). You can correct this by refreshing the emissions data in one of the individual operating scenarios (not the OS0). Change one of the emissions values in the emissions tab and press the save icon. Change it back to its original value and press the save icon again. If done correctly, the summary operating scenario (OS0) should change to blue in the dropdown.

3. Seasonal reporting for pollutants other than VOC, NO_x and CO

Air Contaminant		Actual Emission Rates					
		2017 (Tons/Yr) (1000 tons/yr for CO2 only) (Lbs/Yr for TAPs only)		5/1/17-9/30/17 (Tons/Season)		6/1/17-8/31/17 (Lbs/Day)	
		Stack	Fugitive	Stack	Fugitive	Stack	Fugitive
CO		0.00	0.00			0.00	0.00
NO _x (Total)		0.00	0.00	0.00	0.00	0.00	0.00
VOC (Total)		0.00	0.00			0.00	0.00
Vinyl chloride	00075-01-4	0.00	5.00	0.00	10.0000		

Seasonal data is required only for CO, NO_x and VOC. If the ozone season or carbon monoxide season fields are not grayed out, select a different pollutant from the drop down menu and press the save icon. Then, use the drop-down menu again to change back to the original pollutant and press the save icon. This will gray out the fields so that data does not have to be reported in them.

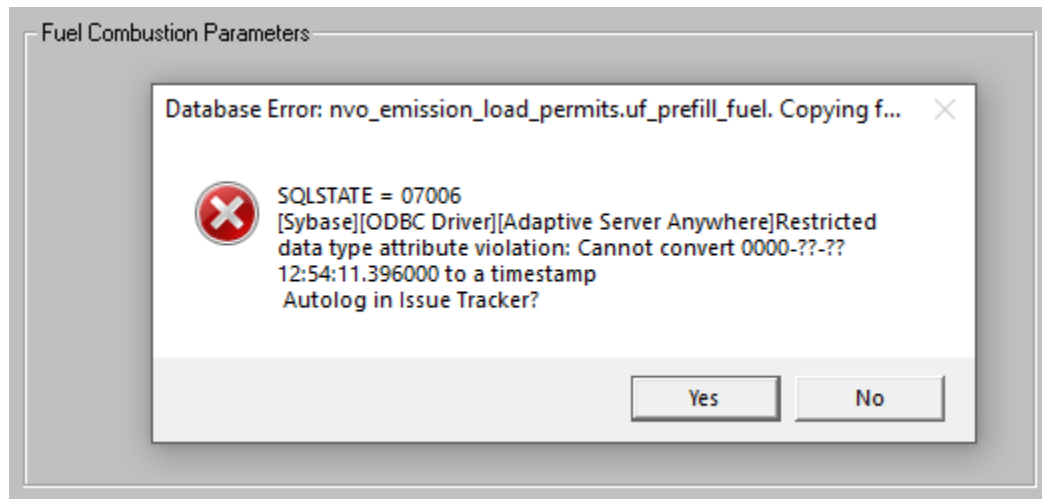
4. Error Number 35 - novaPDF



If you receive this error, your RADIUS installation may have become corrupted. Please download and re-install RADIUS. You will need to have administrative privileges for RADIUS to install correctly. You can re-install on top of the current installation (without first uninstalling) to ensure that your existing files are preserved.

5. Fuel Combustion Details – Database Error: nvo_emission_load_permits.uf_prefill_fuel

Fuel Firing Method must be entered.	Error
Fuel Type must be entered.	Error
Maximum Gross Heat Input(MMBTU/hr) must be entered.	Error
Sulfur Content (%) must be entered.	Error



Emission Fuel Combustion errors will occur during the emission statement administrative check in RADIUS. The flagged emission unit operating scenario may then have the database error screen pop up when trying to enter the fuel combustion parameters. The RADIUS file should be exported and emailed to the NJDEP Emission Statement support email “DEP Emis_Statement” (Emis_Statement@dep.nj.gov) with the impacted emission units and operating scenarios that were flagged in the administrative check. NJDEP support will enter some “dummy” values in the affected operating scenarios, save the RADIUS file and return the export file so the correct values may be entered to replace the dummy values.

6. Pollutant summarization error, amounts cleared in “FC” emissions summary

Source of Failure	Description	Error / Warning
Emission Statement: Emissions Information		
FC	PM-10 (Total) Annual Fugitive Emission rates (tons/yr) must be entered.	Error
FC	PM-10 (Total) Annual Total Emission rates (tons/yr) must be entered.	Error
FC	TSP Annual Fugitive Emission rates (tons/yr) must be entered.	Error
FC	TSP Annual Total Emission rates (tons/yr) must be entered.	Error

Subject Item:	FC		
Operating Scenario:			
Step:			
Equipment Type:			

12 General	
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Air Contaminant		Actual Emission Rates							
		2020 (Tons/Yr) (1000 tons/yr for CO2 only) (Lbs/Yr for TAPs only)		5/1/20-9/30/20 (Tons/Season)		6/1/20-8/31/20 (Lbs/Day)		12/1/19-2/28/20 (Lbs/Day)	
Name	CAS Number	Stack	Fugitive	Stack	Fugitive	Stack	Fugitive	Stack	Fugitive
CO		10.00				5.00		5.00	
NOx (Total)		10.00		5.00	0.00	5.00			
VOC (Total)		10.00				5.00			
Hydrogen chloride		5.00							
PM-10 (Total)									
TSP									

The two pollutants in this case, TSP and PM-10 (Total), were to be deleted from the emissions statement, rather than reported as “0”. However, the pollutants would not clear from the “FC” summary screen after performing an administrative check in RADIUS, resulting in the error messages to enter emissions for the two pollutants. Each operating scenario, including those that did not have reportable emissions for that reporting year or were marked as “Did not operate” will still need to be checked to see if they have the respective pollutants listed in their list of emissions, and acted upon accordingly (in this case, deleted from those operating scenarios). Otherwise the pollutants will keep creating the error messages during the administrative check and repopulating in the FC emissions summary screen.

APPENDIX G: REPORTING REQUIREMENTS

Required Pollutants (Refer to N.J.A.C 7:27-21.3(b))

Facility-Wide Potential to Emit or Actual Emissions	Need to Report
VOC and NO _x < 25 tons AND CO, SO ₂ , NH ₃ , PM _{2.5} , PM ₁₀ , TSP and CH ₄ < 100 tons AND Pb < 5 tons	VOC, NO _x , CO, TAPs
VOC or NO _x ≥ 25 tons OR CO, SO ₂ , NH ₃ , PM _{2.5} , PM ₁₀ , TSP or CH ₄ ≥ 100 tons OR Pb ≥ 5 tons	VOC, NO _x , CO, SO ₂ , TSP, PM _{2.5} , PM ₁₀ , NH ₃ , Pb, CH ₄ , CO ₂ , TAPs

Reporting Units and Seasonal Reporting

Pollutant	Annual (1/1-12/31) Unit	Ozone Season (5/1-9/30) Unit	Peak Ozone Season (6/1-8/31) Unit	Carbon Monoxide Season (12/1- 2/28) Unit
CO	Tons/Year		Pounds/Day	Pounds/Day
NO _x	Tons/Year	Tons/Season	Pounds/Day	
VOC	Tons/Year		Pounds/Day	
SO ₂ , TSP, PM _{2.5} , PM ₁₀ , NH ₃ , Pb, CH ₄	Tons/Year			
CO ₂	1000 Tons/Year			
TAPs	Pounds/Year			

Source Level Reporting Requirements

Report at Facility Level and Source Level	CO, NO _x , VOC, SO ₂ , TSP, PM _{2.5} , PM ₁₀ , NH ₃ , Pb, CH ₄
Can be Reported at Facility Level Only	CO ₂ , TAPs

APPENDIX H: TAPS REPORTING THRESHOLDS

(REPORTING YEAR 2022 & BEYOND)

CAS Number	Air Contaminant	Reporting Threshold
75070	Acetaldehyde	21 lb/yr
107028	Acrolein	1 lb/yr
107131	Acrylonitrile	1 lb/yr
	Arsenic and compounds	0.01 lb/yr
71432	Benzene*	6 lb/yr OR 0.01 lb/hr
	Beryllium and compounds	0.02 lb/yr
106990	1,3-Butadiene	1.5 lb/yr
50328	Benzo(a)pyrene	0.04 lb/yr
	Cadmium and compounds	0.01 lb/yr
56235	Carbon tetrachloride*	8 lb/yr OR 0.01 lb/hr
7782505	Chlorine	9 lb/yr
67663	Chloroform*	2 lb/yr OR 0.01 lb/hr
	Chromium and compounds	1,000 lb/yr
7440484	Cobalt metal and compounds	0.005 lb/yr
	Cyanide compounds (as hydrogen cyanide)	35 lb/yr
542756	1,3-Dichloropropene	11.5 lb/yr
123911	1,4-Dioxane*	9 lb/yr OR 0.01 lb/hr
	Dioxins	0.00012 lb/yr
100414	Ethyl benzene	19 lb/yr
106934	Ethylene dibromide*	0.08 lb/yr OR 0.01 lb/hr
107062	Ethylene dichloride*	1.8 lb/yr OR 0.01 lb/hr
151564	Ethyleneimine*	0.002 lb/yr OR 0.01 lb/hr
75218	Ethylene oxide	0.02 lb/yr
50000	Formaldehyde	3.5 lb/yr
	Glycol ethers (as 2-methoxy ethanol)	1000 lb/yr
118741	Hexachlorobenzene	0.1 lb/yr
302012	Hydrazine	0.01 lb/yr
7647010	Hydrochloric acid	900 lb/yr
7664393	Hydrogen fluoride	600 lb/yr
7439965	Manganese and compounds	0.6 lb/yr
	Mercury and compounds	2 lb/yr
75092	Methylene chloride*	2000 lb/yr OR 0.01 lb/hr
1634044	Methyl tert-butyl ether	180 lb/yr
91203	Naphthalene	1.4 lb/yr
	Nickel and compounds	0.6 lb/yr
7723140	Phosphorous	3.2 lb/yr

1336363	Polychlorinated biphenyls	0.5 lb/yr
	Polycyclic organic matter	2 lb/yr
78875	Propylene dichloride	4.5 lb/yr
91225	Quinoline	0.05 lb/yr
100425	Styrene	80 lb/yr
79345	1,1,2,2-Tetrachloroethane*	0.8 lb/yr OR 0.01 lb/hr
127184	Tetrachloroethylene*	180 lb/yr OR 0.01 lb/hr
71556	1,1,1-Trichloroethane*	2000 lb/yr OR 0.01 lb/hr
79005	1,1,2-Trichloroethane*	3 lb/yr OR 0.01 lb/hr
79016	Trichloroethylene*	8 lb/yr OR 0.01 lb/hr
121448	Triethylamine	325 lb/yr
75014	Vinyl chloride	5 lb/yr
1330207	Xylene	2000 lb/yr

*Compounds with more than one threshold are reportable if either of the listed thresholds (annual or hourly) is met. See N.J.A.C. 7:27-21.3(b) for more details.