



Guidelines for Reporting Emissions from Dry Cleaning Operations

March 2023

Introduction

Dry cleaners may be required to report volatile organic compounds (VOCs) from their usage of organic solvents under the South Coast Air Quality Management District's (South Coast AQMD's) Rule 301(e) or the California Air Resources Board's (CARB's) Regulation for the Reporting of Criteria Air Pollutants and Toxic Air Contaminants (CTR). Additionally, if the facility utilized a boiler, emissions from this source may be required to be reported even if it is unpermitted. Facility owner/operators should review Rule 301(e) and the CTR for applicability and requirements applicable to their facilities.

Per Rule 1421, after January 1, 2021, no perchloroethylene dry cleaning systems should be operating in the district. Please contact us at aer@aqmd.gov if an exception has been made for one's facility. A fee exemption may be applied for perchloroethylene used at dry cleaning facilities that qualify as small businesses (see definition in Rule 201). Dry cleaning using water-based, or carbon dioxide-based cleaning systems are not required to report emissions.

Source Testing

Emissions estimated by continuous emission monitoring system (CEMS) data or an approved source test should be used if available.

Permit Limits or Default Emission Factors

In lieu of CEMS or source test data, permit limits or default emission factors can be used to estimate emissions. The following table presents default emission factors from USEPA's AP-42 Chapter 4.1:

Table 1: Default Emission Factors for Dry Cleaning

Solvent Type (Process Used)	Source	Emission Rate ^a	
		Typical System, kg/100 kg (lb/100 lb)	Well-Controlled System, kg/100 kg (lb/100 lb)
Petroleum (transfer process)	Washer/dryer ^b	18	2 ^c
	Filter disposal		
	Uncooked (drained)	8	
	Centrifuged		0.5 - 1
	Still residue disposal	1	0.5 - 1
Perchloroethylene (transfer process)	Miscellaneous ^d	1	1
	Washer/dryer/still/muck cooker	8 ^e	0.3 ^c
	Filter disposal		
	Uncooked muck	14	
	Cooked muck	1.3	0.5 - 1.3
	Cartridge filter	1.1	0.5 - 1.1
	Still residue disposal	1.6	0.5 - 1.6
Trichlorotrifluoroethane (dry-to-dry process)	Miscellaneous ^d	1.5	1
	Washer/dryer/still ^f	0	0
	Cartridge filter disposal	1	1
	Still residue disposal	0.5	0.5
	Miscellaneous ^d	1 - 3	1 - 3

[AP-42, Vol. I, CH 4.1: Dry Cleaning \(epa.gov\)](#)

If no other information is available, the following emission factors can be used. The second column contains emission factors, if the solvent throughput is in pounds of solvent used. The third column contains emission factors if throughput is in gallons of solvent.

Dry Cleaning Solvent	VOC EF, lb/lb solvent	VOC EF, lb/gal of solvent
Petroleum	0.18	1.17
Perchloroethylene	0.08	1.09
Trichlorotrifluoroethane	0.03	0.39

Toxic Air Contaminants

If perchloroethylene or trichlorotrifluoroethane is used, then the amount of those TACs should be reported using the same emission factor used to estimate the VOC emissions.

Reporting Emissions on the AER Reporting Tool:

- For most facilities, permitted dry-cleaning devices should already be preloaded in the AER Reporting Tool. Under the **Emissions Sources (ES)** tab, the device should be seen in the green table. Click on **Profile**. If user does not see their device or needs to add a new dry-cleaning device, click on the orange button **Add New Emission Source**.

Facility ID: 999005

Facility Dashboard
Reported Summaries

Abbreviated Reporting

- Facility Information
- Status Update
- Combustion Fuels
- Emission Sources (ES)**
- Report Process/Emissions
- Additional Toxic Substances Production and Usage
- Perform Data Validation
- Review Summaries
- Print Facility Report
- Report Submission

Build Reporting Structure

Emission Sources (ES) Classification

Summary: This section contains facility permit profile. Please make sure that every device has a specified Emission Source (ES). New emission sources can also be added.

Instruction: Add Devices (emissions sources) by clicking "Add New Emission Source". Edit devices by clicking "Profile" under the Emission Source (ES) Column. Add emission data by clicking "Open" under the Emissions column. Upload storage tank data by clicking on link "Click here" below.

Abbreviated Reporting

Starting in Reporting Year 2022 some facilities can qualify for Abbreviated Reporting. Your eligibility to file Abbreviated Report depends in part on the types of Emission Sources used at your Facility.

Click [here](#) to find out more details about Abbreviated Reporting and its possible benefits.

Storage Tank Emissions Batch File Import - [Click here](#) for more instructions.

[Add New Emission Source](#)

Displaying 2 emission sources.

A/N Permit NO
AER Device ID Permit Device ID

Search:

Emission Source (ES)	Emissions	A/N	Permit NO	Permit Device ID	Permit Equipment Description	AER Device ID	ES Name	ES Group Name	Source Category	Has Emissions	Equipment	PERP	ES Status
Profile	Open	C18288	M08402			ES3	Dry Cleaner		Other Use of Organics	Y	Other evaporative sources	N	Work i progre
Profile	Open					ES1	Boiler		External Combustion	Y	Boiler <10 MMBTU/HR	N	Work i progre

Showing 1 to 2 of 2 entries

- Fill out relevant information (with the red asterisk) to the Emission Source by identifying ES Name (example: Dry Cleaner) and selecting the Operating ES Status (e.g., Normal Operation) from the drop-down menu. Then, click **Categorize Emission Source**.

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Edit Emission Source

Instruction: Add new emissions sources using information found on permits, manufacturers specifications, or identifying placards. Select the Operating ES Status that best reflect the device's operation for this reporting period. All areas with a Red Asterisk (*) must be addressed. Note: Some devices have been pre-populated, verify that the information is correct

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Permitted A/N	<input type="checkbox"/>
PERP Equipment(CARB's Portable Equipment Registration Program)	<input type="checkbox"/> Only CARB GHG MRR and Over 250 tons/yr (PTE) facilities must report PERP Emissions are not included when calculating emission fees
Permit No	
Permit Device ID	<input type="text"/>
Permit Equipment Description	<input type="text"/>
AER Device ID	ES3 Assign new ID
ES Name	<input type="text" value="Dry Cleaner"/> *
Operating ES Status	<input type="text" value="Normal Operation"/> *
Comment	<input type="text"/>
Emission Source Category	<input type="text" value="Other Use of Organics"/> Categorize Emission Source *
Equipment	Other evaporative sources
Design Capacity	<input type="text" value="0.000000"/> <input type="text"/>

[Save](#) or [Save and return to List of Emission Sources](#) or

[Save and proceed to Process Reporting](#) or [Cancel](#)

[Optional: Save and Mark as Completed](#) Click here to [delete](#) this emission source and associated data.

3. After clicking **Categorize Emission Source**, the following pop-up window will appear. Select “**click here**” for **Other Use of Organics**. Then check the box for **Other evaporative sources**. Click **Save** to save and the pop-up will close.

Permitted	A/N	Permit No	Permit Device ID	Permit Equipment Description	AER Device ID	ES Name
No	A	No	No	No	ES3	Dry Cleaner

All Emission Source with this icon A qualify for AER Abbreviated Reporting
Click [click here](#) to find out more details about Abbreviated Reporting and its possible benefits.

1. External Combustion Equipment (e.g., boiler, dryer, oven, furnace, heater, afterburner, flare, kiln or incinerator) [click here](#) to select one the following Equipment:
2. Internal Combustion Equipment (e.g., internal combustion engine (excluding vehicles), turbine or micro turbine) [click here](#) to select one of the following Equipment:
3. Spray Coating/Spray Booth (e.g., coatings, solvents, adhesives, etc.) [click here](#) to select one of the following Equipment:
4. Other Use of Organics (e.g., coatings, solvents, inks, adhesives, etc.) except in Spray Coating/Spray Booth, [click here](#) to select one of the following Equipment:
 - Degreaser
 - Coating (Flow / Dip / Roll / Hand Application)
 - Printing
 - Other evaporative sources
5. Liquid Storage Tank (e.g. Underground, Aboveground, Small Tanks, Dispensing Systems) [click here](#) to select one of the following Equipment:
6. Fugitive Components (Emission Leaks from Process Components per Rule 453, 1173 and 1176) [click here](#) to select all applicable Equipment:

Save **Cancel**

- An AER Device ID will be assigned. User can click **Save and return to List of Emission Sources** to proceed to the Emission Source page or click **Save and proceed to Process Reporting** to continue to emissions reporting for this device. For this example, user should click on **Save and proceed to Process Reporting**.

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Edit Emission Source

Instruction: Add new emissions sources using information found on permits, manufacturers specifications, or identifying placards. Select the Operating ES Status that best reflect the device's operation for this reporting period. All areas with a Red Asterisk (*) must be addressed. Note: Some devices have been pre-populated, verify that the information is correct

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Permitted A/N	<input type="checkbox"/>	
PERP Equipment(CARB's Portable Equipment Registration Program)	<input type="checkbox"/>	Only CARB GHG MRR and Over 250 tons/yr (PTE) facilities must report PERP Emissions are not included when calculating emission fees 
Permit No		
Permit Device ID	<input type="text"/>	
Permit Equipment Description	<input type="text"/>	
AER Device ID	ES3	Assign new ID
ES Name	<input type="text" value="Dry Cleaner"/>	*
Operating ES Status	<input type="text" value="Normal Operation"/>	*
Comment	<input type="text"/>	
Emission Source Category	Other Use of Organics	Categorize Emission Source *
Equipment	Other evaporative sources	
Design Capacity	<input type="text" value="0.000000"/>	<input type="text"/>

[Save](#) or [Save and return to List of Emission Sources](#) or

[Save and proceed to Process Reporting](#) or [Cancel](#)

[Optional: Save and Mark as Completed](#) Click here to [delete](#) this emission source and associated data.

- A window will pop-up showing the new process (P1). Click **Open** to continue. User can also open the process from the **Emission Sources (ES)** page by clicking **Open** under the Emissions column for the device.

Facility ID: 999005

Form data is successfully saved.

Facility Dashboard
Reported Summaries

Build Reporting Structure

- Abbreviated Reporting
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 - Emission Sources (ES)

Emission Sources (ES) Classification

Summary: This section contains facility permit profile. Please make sure that every device has a specified Emission Source (ES). New emission sources can also be added.

Process References ✕

A/N	Permit No	Permit Device ID	Permit Device Description	AER Device ID	ES Name	ES Group Name	Source Category	Emissions?	Equipment	PERP	ES Status
Open	C18286	M06402			ES3	Dry Cleaner		Other Use of Organics	Y	Other evaporative sources	N

Process ID	Source Group	Process/Material/Fuel Name	Status	Operation Type
Open	P1	Other Use of Organics	Work in progress	routine

Add Process/Material/Fuel
i

OK

Displaying 2 emission sources.

A/N Permit NO

AER Device ID Permit Device ID

Search: Print Preview

Emission Source (ES)	Emissions	A/N	Permit NO	Permit Device ID	Permit Equipment Description	AER Device ID	ES Name	ES Group Name	Source Category	Has Emissions	Equipment	PERP	ES Statu
Profile	Open	C18286	M06402				ES3	Dry Cleaner	Other Use of Organics	Y	Other evaporative sources	N	Work progre
Profile	Open						ES1	Boiler	External Combustion	Y	Boiler <10 MMBTU/HR	N	Work progre

Showing 1 to 2 of 2 entries ◀ Previous Next ▶

- Click on the “**Open**” link under Step 1: Process in order to fill out relevant information (with the red asterisk). The items from the pull-down menus for Major Group, Type of Operation, and Application Method must be selected. Additionally, the Material Description (Example: Petroleum Solvent) text box also needs to be filled out. Click on **Save** once all the relevant information has been selected.

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[Reported Summaries](#)

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- External Combustion
 - Internal Combustion
- Use of organics
- Spray Coating/Spray Booth
 - Other Use of Organics**
 - Storage Tanks
 - Fugitive Components
 - Other Processes
 - Process Upset
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Other Use of Organics

Please provide specific information for every process associated with the other use of organics (except in spray coating/spray booth) including usage, emission factor, and control efficiency (if any). **You must select Material/Activity Code and throughput units before reporting emissions.** Detailed instructions are available by clicking on Help icon in the tool bar.

Abbreviated Reporting

Certain... As part... If you s... Abbrev... Click h...

Step 1:

[Open](#)

Step 2:

[Open](#)

Step 3:

[Open](#)

[Add](#)

Edit Emission Process - Other Use of Organics

AER Device ID	Permit Device ID	A/N	Process ID	Rule #	Material/Activity Code	Material Description	SCC
ES3		C18286	P1	1102	Others:Dry Cleaners Using Solvent Other Than Perchloroethylene:Dry Cleaning System	Petroleum Solvent	

Step 1:

AER Device ID: ES3 AER Device Name: Dry Cleaner
 PERMITTED AN: C18286 Permit Device ID:
 Process ID: P1 Process Name:
 Process Comment:
 SCC:
 Equipment: Other evaporative sources

Step 2:

Material / Activity *

Major Group: Others
 Type of Operation: Dry Cleaners Using Solvent Other Than Perchloroethylene
 Application Method: Dry Cleaning System

Step 3:

Type of Material:
 Material Description: Petroleum Solvent *
 Additional Rules: [Add Rule](#)

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

- Click on the “**Open**” link under Step 2: Throughput (solvent used) to fill out relevant information (with the red asterisk). Input annual throughput of the solvent used must be selected as either pounds (lbs) or gallons (gal). (Note: In order to utilize the default emission factors provided in Table 1, user needs to input information in lbs.)

If throughput is measured as gallons of solvent used, users can obtain the density of the solvent from the Safety Data Sheet (SDS) provided by the solvent manufacturer or supplier, and multiple it by the number of gallons to convert the number of gallons used the amount of pounds used.

Users should select as Input as the Throughput type. Click on **Save** once all the relevant information has been filled out.

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Other Use of Organics

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Edit Throughput Information - Other Use of Organics

AER Device ID	Permit Device ID	A/N	Process ID	Rule #	Material/Activity Code	Material Description	SCC
ES3		C18286	P1	1102	Others:Dry Cleaners Using Solvent Other Than Perchloroethylene:Dry Cleaning System	Petroleum Solvent	
Annual Throughput							
100.00000000 lbs							
Usage (Annual Throughput)				100.00000000		* lbs *	
Throughput Type				Input *			
Usage Comment							
Save						Cancel	

Step 2: Throughput

Annual Throughput
100.00000000 lbs

[Open](#)

Step 3: Criteria Emissions (lbs)

Pollutant	EF	Unit	EF Data Source	Overall CE	Emissions
VOC	1.80000000e-1	lbs / lbs	SCAQMD Guidelines		1.80000000e+1

[Add New](#)

Step 4: Toxic (TAC/ODC) Emissions (lbs)

TAC/ODC Group	CAS #	EF	Unit	EF Data Source	Overall CE	Emissions
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[Add New](#)

8. Click on “**Add New**” for Step 3: Criteria Pollutant Emissions to fill out relevant information (with the red asterisk). For the pull-down menu for Pollutant, select VOC. For emission factor (EF), input the EF that best fits the device process from Table 1. (Note: The EF units in Table 1 are lbs/100lbs and thus would need to convert them into lb/lbs. Example: 18 lbs/100lbs = 0.18 lbs/lbs) For the pull-down menu for Emission Factor Data Source, select SCAQMD Guidelines. Click on **Save** once all the relevant information has been filled out.

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Other Use of Organics

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Open Criteria Emission Information - Other Use of Organics

AER Device ID	Permit Device ID	A/N	Process ID	Rule #	Material/Activity Code	Material Description	SCC
ES3		C18286	P1	1102	Others:Dry Cleaners Using Solvent Other Than Perchloroethylene:Dry Cleaning System	Petroleum Solvent	
Annual Throughput							
100.00000000 lbs							

Pollutant: *

Emission Factor (EF): * lbs/lbs

Overall Control Efficiency:

Emission Factor Comment:

If not using **AQMD default** emission factor please provide detailed references in the Emission Factor Comment box above or upload file with the information. Processes without this information are subject to audit.

Emission Factor Data Source: *

Emissions: 1.80000000e+1 lbs

Pollutant	EF	Unit	EF Data Source	Overall CE	Emissions
<input type="button" value="Add New"/>					

Step 4: Toxic (TAC/ODC) Emissions (lbs)

TAC/ODC Group	CAS #	EF	Unit	EF Data Source	Overall CE	Emissions
<input type="button" value="Add New"/>						

Note: Step 4: If perchloroethylene or trichlorotrifluoroethane is used, then the amount of those TACs should be reported using the same emission factor used to estimate the VOC emissions.