



# Guidelines for Fuel Dispensing Operations

(Revised December 2024)

## **Detailed Site-Specific AP-42 Method**

When estimating emissions from underground storage tanks, it is assumed that no breathing or standing losses occur because the insulating nature of the earth limits the temperature change. Underground storage tanks are classified as fixed roof tanks, users NOT submitting an Abbreviated Report may use the current AP-42, Chapter 7.1 (June 2020) methodology to estimate working loss (total loss) for aboveground or underground storage tanks.

## **Default Emission Factor Method**

For **service stations and other facilities where gasoline and/or diesel fuel** are transferred and dispensed, VOC emissions may be estimated and reported using emission factors established by the South Coast AQMD and the California Air Resources Board (CARB). Diesel fuel dispensing emission factors were estimated based on AP-42, Chapter 5.2 (June 2008). These emission factors include losses from loading, storing, dispensing, and spills or leaks from all components of the transfer and dispensing facility. All gasoline fuel dispensing assumes emissions control technology. Users should use the appropriate emission factor for diesel fuel dispensing based on whether the operations are controlled or uncontrolled.

## **Emission Factors for Gasoline Fuel Dispensing:**

### **Underground Gasoline Tanks:**

<b>Criteria Pollutant</b>	<b>EF (lbs/Mgal)</b>	<b>Controlled</b>
VOC	0.743	Yes

<b>TAC Pollutant</b>	<b>EF (lbs/Mgal)</b>	<b>Controlled</b>
Benzene	4.00E-03	Yes
Ethyl Benzene	3.63E-03	Yes
n-Hexane	1.36E-02	Yes
Naphthalene	4.20E-04	Yes
Propylene	1.84E-05	Yes
Xylenes	1.79E-02	Yes
Toluene	1.91E-02	Yes

### **Aboveground Tanks:**

<b>Criteria Pollutant</b>	<b>EF (lbs/Mgal)</b>	<b>Controlled</b>
VOC	19.519	No
VOC	1.322	Yes

<b>TAC Pollutant</b>	<b>EF (lbs/Mgal)</b>	<b>Controlled</b>
Benzene	7.09E-03	Yes
Ethylbenzene	6.38E-03	Yes
Naphthalene	7.35E-04	Yes
n-Hexane	2.42E-02	Yes
Propylene	3.29E-05	Yes
Toluene	3.37E-02	Yes
Xylenes	3.14E-02	Yes

### **Emissions Factors for Diesel Fuel Dispensing:**

<b>Criteria Pollutant</b>	<b>EF (lbs/Mgal)</b>	<b>Controlled</b>
VOC	0.028	No
VOC	0.0028	Yes

The AER webtool automatically populates these default emission factors when fuel dispensing is chosen as an emission source category in the Edit Device page (Note, Mgal = 1,000 gallons, MMgal = 1,000,000 gallons).

### **Example Reporting for Gasoline Dispensing at a Fueling Site**

An industrial facility operating on-site refueling equipment dispensed 25,000 gallons of gasoline during the reporting period.

The following steps illustrate how to report VOC and Toxics emissions from underground storage tanks with attached gasoline dispensing equipment.

First, go to the Emission Sources (ES) page using the blue font menu on the left-hand side of the webpage and select the Profile link next to the device you would like to report.

Facility ID: 999014

Abbreviated Reporting

- 1. Facility Information
- 2. Status Update
- 3. Combustion Fuels
- 4. Emission Sources (ES)**
- 5. Report Process/Emissions
- 6. Additional Toxic Substances Production and Usage
- 7. Perform Data Validation
- 8. Review Summaries
- 9. Print Facility Report
- 10. 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 1 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
<a href="#">Profile</a>	<a href="#">Open</a>	12345	F12345				ES1	Fueling Equipment	Storage Tanks	Y	Storage tank and Dispensing	N	Work in progress

Showing 1 to 1 of 1 entries ◀ Previous Next ▶

Complete all required fields (i.e., fields marked with a red asterisk “\*\*”) on the Edit Emission Source page, being careful to select the appropriate Tank Type from the drop-down list. Once completed with data entry, click any of the orange Save buttons to continue.

Facility ID: 999014


- Abbreviated Reporting
- 1. Facility Information
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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

### 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.

Permitted	<input checked="" type="checkbox"/>
A/N	12345
PERP Equipment(CARB’s Portable Equipment Registration Program)	<b>Only CARB GHG MRR and Over 250 tons/yr (PTE) facilities must report PERP</b> <input type="checkbox"/> Emissions are not included when calculating emission fees 
Permit No	F12345
Permit Device ID	
Permit Equipment Description	
AER Device ID	ES1
ES Name	Fueling Equipment *
Operating ES Status	Normal Operation *
Comment	<input type="text"/>
Emission Source Category	Storage Tanks <b>Categorize Emission Source *</b>
Equipment	Storage tank and Dispensing
Tank Type	Underground Tank *
Design Capacity	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.

To enter data for the fuel dispensing equipment, select the Device ID from the Emission Sources page by clicking on the Open link in the emission source table. Then, click on the Open button on the Process References pop-up window.

Work In Progress · Facility ID: 999014 · SOUTH COAST AIR QUALITY MGT DIST(SCAQMD) · Reporting period: 2022

Facility ID: 999014

Abbreviated Reporting

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- 10.

Form data is successfully saved.

### 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

**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
<a href="#">Open</a>	12345	F12345			ES1	Fueling Equipment		Storage Tanks	Y	Storage tank and Dispensing	N

Process ID	Source Group	Process/Material/Fuel Name	Status	Operation Type
<a href="#">Open</a> P1	Storage Tanks		Work in progress	routine

**Add Process/Material/Fuel** ⓘ

OK

A/N  Permit NO

AER Device ID  Permit Device ID

Search Emission Sources

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
<a href="#">Profile</a> <a href="#">Open</a>		2345	F12345			ES1	Fueling Equipment		Storage Tanks	Y	Storage tank and Dispensing	N	Work in progress

Showing 1 to 1 of 1 entries

◀ Previous Next ▶

Enter process information for the device by clicking on the Open link under “Step 1: Process” on the Report Process/Emissions page. Select the appropriate Product type and Rule # (required information) from the drop-down lists, and then click the Save button.

Facility ID: 999014

- Abbreviated Reporting
- 1. Facility Information
- 2. Status Update
- 3. Combustion Fuels
- 4. Emission Sources (ES)
- 5. Report Process/Emissions**
  - Combustion
  - External Combustion
  - Internal Combustion
  - Use of organics
    - Spray Coating/Spray Booth
    - Other Use of Organics
  - Storage Tanks**
  - Fugitive Components
  - Other Processes
  - Process Upset
- 6. Additional Toxic Substances Production and Usage
- 7. Perform Data Validation
- 8. Review Summaries
- 9. Print Facility Report
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[← Back to Emission Source Process Reference](#)

### Storage Tanks

**Edit Emission Process - Storage Tanks**

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Tank Type	Product	Rule #
ES1		12345	P1	Storage tank and Dispensing			

AER Device ID: ES1      AER Device Name: Fueling Equipment

PERMITTED      AN: 12345      Permit Device ID

Process ID: P1      Process Name:

Tank Type: Imported from EPA TANKS      No

Process Comment:

Product: Gasoline (RVP 7) - Default \*

Rule #: 461 \* [Add Rule](#)

EquipmentCode: Storage tank and Dispensing

Save    Cancel

Step 1: Process Optional: Mark as Completed

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Tank Type	Product	Rule #
<span style="border: 2px solid red; border-radius: 50%; padding: 2px;">Open</span>	ES1		12345	P1	Storage tank and Dispensing		

[Click here to delete this process.](#)

Step 2: Throughput

Enter fuel throughput information by clicking on the Open link under Step 2: Throughput. Enter the amount of gasoline dispensed from the equipment, select the appropriate units of measure (Note: Mgal = 1,000 gallons, MMgal = 1,000,000 gallons), and select throughput type (Input is the default). Click the Save button to save the information and close the window.

**Edit Throughput Information - Storage Tanks**

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Tank Type	Product	Rule #
ES1		12345	P1	Storage tank and Dispensing	Underground Tank	Gasoline (RVP 7) - Default	461

**Annual Throughput**  
25.00000000 M gal

Annual Throughput: 25.00000000 \* M gal \*

Throughput Type: Input \*

Throughput Comment:

Save    Cancel

Step 2: Throughput

Annual Throughput
<span style="border: 2px solid red; border-radius: 50%; padding: 2px;">Open</span> 25,00000000 M gal

Step 3: Criteria Emissions (lbs) Use [Default Emission Factors](#) if available.

Pollutant	EF	Unit	Controlled EF	EF Data Source	Overall CE	Emissions
<span style="border: 2px solid red; border-radius: 50%; padding: 2px;">Open</span>	VOC	8.43000000e-1	lbs / M gal	No	AQMD default	2.10750000e+1

At this point, users submitting an Abbreviated Report should return to the Emission Sources (ES) page and following the steps above. Users submitting an Abbreviated Report must not change default emission factors or add additional pollutants as detailed below. Doing so will disqualify the user from submitting an Abbreviated Report.

For users that are NOT CTR Abbreviated Reporters, the best available site-specific information should be used. For example, the Safety Data Sheets (SDS) for the gasoline used at the site indicate the presence of benzene, ethylbenzene and naphthalene in varying percentages. Since the SDS states that the gasoline contains naphthalene, the user must enter a new toxic compound by clicking on the Add New button under Step 4: Toxic (TAC/ODC) Emissions. Select the appropriate TAC, enter the emission factor, and select the Emission Factor Data Source (SCAQMD Guidelines for this example).

**Open Toxic (TAC/ODC) Emission Information - Storage Tanks**

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Tank Type	Product	Rule #
ES1		12345	P1	Storage tank and Dispensing	Underground Tank	Gasoline (RVP 7) - Default	461
<b>Annual Throughput</b>							
25.00000000 M gal							
TAC/ODC Toxic Pollutants / Ozone Depleting Compounds							
Pollutant	19 - PAHs [PAH, POM]						
	91203 - Naphthalene [PAH, POM]						
TAC Group	19 - PAHs [PAH, POM]						
CAS # (Pollutant)	91203 - Naphthalene [PAH, POM]						
STORAGE TANK LOSS							
Total Loss EF	0.00042 lbs/M gal						
	<input checked="" type="checkbox"/> Controlled EF value (mark checkbox if EF listed represents EF determined after control)						
Overall Control Efficiency							
Emission Factor Comment							
If not using <b>AQMD default</b> 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	SCAQMD Guidelines						
Emissions	1.05000000e-2 lbs						

**Save** **Cancel**

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

	TAC/ODC Group	CAS #	EF	Unit	Controlled EF	EF Data Source	Overall CE	Emissions
<a href="#">Open</a>	Benzene	71432	3.99000000e-3	lbs / M gal	No	AQMD default		9.97500000e-2
<a href="#">Open</a>	Ethyl benzene	100414	3.63000000e-3	lbs / M gal	No	AQMD default		9.07500000e-2
<b>Add New</b>								

Data entry for this device is now complete. You may edit any of the entered data by selecting the Open link next to the device on the Emission Sources (ES) page and following the steps above.