

3.1 BULK LOADING FACILITIES

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Process Description

[EPA's Chapter 5.2 \(Transportation and Marketing of Petroleum Liquids\) of AP-42](#) provides information regarding the transportation and marketing of petroleum liquids. In addition, fugitive emissions from leaking process equipment and control systems include pumps, valves, compressors, and flanges. The emissions from these components should be identified and accounted for with the application bulk loading facility. The handling of fugitive emissions is covered in the permit handbook chapter for [Petroleum Refinery Fugitive Emissions](#). This permit handbook chapter covers bulk loading terminals and plants and marine loading operations. A gasoline bulk terminal is a distributing facility which receives gasoline by other than tank truck or rail car, stores it in stationary tanks, and loads it into tank trucks for delivery to gasoline bulk plants, service stations or other distributing points. A gasoline bulk terminal is a distributing facility, which receives gasoline by tank truck, stores it in stationary tanks, and loads it into tank trucks for delivery to service stations or other distribution points.

Modifications, replacement, or addition of fugitive components (e.g., valves, flanges, pumps, compressors, relief valves, process drains) at existing permitted process units at petroleum refineries, chemical plants, bulk terminals or bulk plants are exempt from permitting requirements per [Regulation 2-1-128.21](#), provided that the cumulative emissions from all additional components installed a given process unit during any consecutive twelve month period do not exceed 10 pounds per day, and that the components meet applicable requirements in Regulation 8-18. However, even if the proposed change in fugitive components is exempt per [Regulation 2-1-128.21](#), an application for an "alteration" of the process unit is required, per Regulation [2-1-233](#) and [3-304](#).

Storage vessels, which contain hydrocarbon condensate, require a permit if the vessel is greater than 260 gallons in capacity, per [Regulation 2-1-123.1](#) and contain an organic layer which is greater than 1 weight percent VOC per [Regulation 2-1-123.6](#). The permitting of these storage tanks is covered in the permit handbook for [Organic Liquid Storage Tanks](#).

Completeness Determination

The following District forms should be completed and fees provided for the bulk loading facilities. Use the [Completeness Determination Checklist](#) to verify completeness. Use the [Data Form Guidance](#) to ensure that the forms are completed correctly. Use the [Fee Calculation Guidance](#) to ensure that the fees are calculated accurately.

1. [Form 101-B](#) (one for facility).
2. [Form T](#) (one per loading rack).
3. Identification of the total number of components (pumps, valves, compressors, and flanges of bulk loading facility).
4. If the bulk loading rack exhausts into an add-on abatement device, [Form A](#) (one per device).
5. If Health Risk Screening is triggered, [Form HRSA](#) (one per source).
6. Fees, calculated per [Regulation 3](#) (Schedule B) for compressor engines, (Schedule C) for condensate tanks; and (Schedule F) for dehydrators.

Emission Calculations

According to [Chapter 5.2 of EPA's AP-42](#), loading losses are the primary source of evaporative emissions from rail tank, tank truck, and marine vessel operations.

Reasonable Achievable Control Technology (RACT) or Best Available Control Technology (BACT), if applicable, emission levels should be used to estimate bulk-loading losses with the proposed, maximum annual throughput. If a lower limit is demonstrated, a lower emission limit may be used to estimate bulk-loading losses:

$$\text{POC} = \text{Maximum Projected Throughput (gal/yr)}(\text{Emission Factor lb/1000 gal})$$

Operation	Emission Factor (lb/1000 gal)
Gasoline Bulk Terminal	0.08 (RACT) *
	0.028 (BACT)
Gasoline Bulk Plant	0.50 (RACT) *
Gasoline Marine Loading	0.05 (RACT) *
Non-Gasoline Bulk Loading	0.17 (RACT) *

* [Regulation 8-6-301](#) limits non-gasoline bulk terminals losses to 0.17 lb per 1000 gallons; [Regulation 8-33-301](#) limits bulk terminal losses to 0.08 pound per 1000 gallon; [Regulation 8-39-302](#) limits bulk plant losses to 0.50 pounds per 1000 gallons, and [Regulation 8-44-304](#) limits marine loading losses to 2 pounds per 1000 barrels (0.05 lb/1000 gal).

If other fuels (such as diesel or jet) are being distributed, the emission factors for these fuels can be obtained from [Chapter 5.2 of EPA’s AP-42](#). Fugitive emissions should also be estimated. The handling of fugitive emissions is covered in the permit handbook chapter for [Petroleum Refinery Fugitive Emissions](#).

Toxic Risk Screening:

The permit engineer should request that the applicant provide a detailed breakdown of the components, which make up the gasoline. Generally, gasoline consists of the following compounds:

Toxic Pollutant	% by volume in gasoline	Risk Screening (lb/yr)
Benzene	up to 5%	6.7
Toluene	up to 35%	39000
Xylenes	up to 25%	58000
n-Hexane	up to 8%	83000
Naphthalene	up to 1.1%	270
Styrene	up to 4%	140000

Then, based on the total organic emissions estimated and the toxics components breakdown, the permit engineer should ensure that the emission calculations include the hourly and annual emission estimates for these TACs to determine whether an acute or chronic risk screening trigger level listed in [Table 2-5-1 of Regulation 2-5](#) is exceeded.

Applicable Requirements

District Rules and Regulations

Non-gasoline bulk terminals and bulk plants are subject to [Regulation 8-6 \(Organic Liquid Bulk Terminals and Bulk Plants\)](#), while gasoline bulk terminals are subject to [Regulation 8-33 \(Gasoline Bulk Terminals and Gasoline Delivery Vehicles\)](#) and gasoline bulk plants are subject to [Regulation 8-39 \(Gasoline Bulk Plants and Gasoline Delivery Vehicles\)](#). [Regulation 8-44 \(Marine Tank Vessel Operation\)](#) regulates marine loading operations. Each applicable regulation specifies an emission limit. The permit engineer should review the application and ensure that the applicant has or will demonstrate compliance with the applicable emission standards and operating requirements.

Best Available Control Technology (BACT)

The following are applicable BACT requirements for:

Bulk Loading Facilities

- [Marine Loading](#)
- [Tank Truck & Rail Car Bulk Loading \(except Gasoline Bulk Terminals\)](#)
- [Tank Truck & Rail Car Bulk Loading - Gasoline Bulk Terminals](#)

Inform the [BACT Coordinator](#) of updates to the BACT/TBACT Workbook.

NSPS

Gasoline bulk terminals and bulk plants are subject to [NSPS Subpart XX—Standards of Performance for Bulk Gasoline Terminals](#). In general, District [Regulation 8-39](#) is more stringent than Subpart XX, and so compliance with [Regulation 8-39](#) is also compliance with [Subpart XX](#).

California Environmental Quality Act (CEQA)

Permit applications which are reviewed following the specific procedures, fixed standards and objective measurements set forth in this chapter (3.1) are classified as ministerial and will accordingly be exempt from CEQA review per [Regulation 2-1-311](#).

In addition to the above-mentioned source-specific applicable requirements, other requirements may also be applicable depending on the facility, its application emissions, and its source location:

- Offsets
- Prevention of Significant Deterioration
- School Notification
- Risk Screening Analysis

Permit Conditions

Standardized conditions for bulk loading operations are available from the [Permit Condition Guidance](#). Refer to the [Evaluation Report Template Guidance](#) to obtain the Microsoft Word formatted permit conditions for this source category.