

SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT

**Office of the Fire Marshal
Hazardous Materials Division**



UNDERGROUND STORAGE TANK CLOSURE REQUIREMENTS

Revised January 2021

Table of Contents

Table of Contents.....	2
Abbreviations.....	3
References	3
Introduction	4
Upgrade Requirements	4
Safety	4
Tank Excavation and Cleaning	4
Tank Inerting	5
Scheduling	5
Additional Inspections	5
Permit Expiration.....	5
Additional Agency Requirements	5
Sampling	6
Minimum Constituents to be Analyzed	7
Gasoline	7
Diesel #1 or #2.....	7
Waste (Used) Motor Oil	7
Jet A, JP5, JP8, Fuel oil #1 or #2	7
Heavy Fuel Oils (e.g. bunker fuel).....	7
Types of UST Closures	9
Closure by Removal	9
Closure in Place	9
Found Tanks	9
UST Closure Submittal Checklist.....	10
Addition Submittal Requirements.....	11
Closure in Place	11
Found Tanks	11
UST Closure Inspection Checklist	12
Tank Closure in CERS.....	14
UST Closure Report Checklist	15

Abbreviations

ABBREVIATION	DEFINITIONS
BTEX	Benzene, toluene, ethylbenzene, and xylene
CCR	California Code of Regulations
CERS	California Environmental Reporting System
CGI	Combustible Gas Indicator
CHSC	California Health and Safety Code
EDB	1,2-dibromoethane
EDC	1,2-dichloroethane
EPA	Environmental Protection Agency
JP5	Jet Propellant 5
JP8	Jet Propellant 8
LEL	Lower Explosive Limit
MTBE	Methyl tertiary butyl ether
PAH	Polycyclic aromatic hydrocarbon
SB	Senate Bill
SBCC	San Bernardino County Code
CSLB	Contractors State License Board
TBA	t-Butyl alcohol
TPH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
VOC	Volatile organic compound

References

- California Code of Regulations (CCR)
 - Title 23, Division 3, Chapter 16, Article 7, (Underground Storage Tank Closure Requirements) Sections 2670-2672 (General Applicability, Temporary Closure Requirements, Permanent Closure Requirements)
 - Title 22, Division 4.5, Chapter 32 (Management of Tanks), Section 67383.1-67383.5
- California Health and Safety Code Section 25298 (Abandonment, Closing, or Temporary Ceasing of Operation of Underground Storage Tank)
- San Bernardino County Code Title 2, Division 3, Article 2 (Underground Storage Tanks CUPA Program Element) Sections 23.07210 – 23.07214
- PEI/RP1700-18 Recommended Practices for the Closure of Underground Storage Tanks and Shop-Fabricated Aboveground Storage Tank Systems
- Leaking Underground Fuel Tank Guidance Manual. California State Water Resources Control Board (September 2012). Refer to:
 - https://www.waterboards.ca.gov/water_issues/programs/ust/luft_manual/manual_dec2015.pdf

Introduction

California Health & Safety Code Section (CHSC) 25404 delegates authority for implementing and enforcing statewide Underground Storage Tank (UST) requirements to the local Certified Unified Program Agency (CUPA). In San Bernardino County, the Hazardous Materials Division of the San Bernardino County Fire Department's Office of the Fire Marshal, hereinafter referred to as the Division, is the CUPA for the entire county.

In San Bernardino County, no person shall abandon, close, or remove an underground storage tank, except with a permit from the CUPA.¹

The period between cessation of hazardous substance storage and the application for permanent tank closure shall not exceed ninety (90) calendar days.²

The UST shall continue to be monitored until all fuel is removed. The UST monitoring panel (e.g., Veeder Root) shall not be disconnected or power to the UST system may not be terminated prior to removal of fuel. The UST continues to be subject to all UST compliance requirements, monthly designated operator inspections, routine testing, and operating fees until the USTs are removed.

Upgrade Requirements

By December 31, 2025, facilities with single-walled USTs must permanently close the UST and facilities with single-walled product piping must upgrade system to double-walled product piping.³

Safety

The contractor shall be responsible for ensuring that conditions at the site provide for workplace safety, protection of the environment, and the integrity of nearby structures. This includes:

- Identifying buried utility lines prior to digging
- Ensuring equipment is appropriately sized for excavation and soil sampling
- Excavation safety

Tank Excavation and Cleaning

Excavation of underground piping and the soil around the tank, and the removal of tank contents may go unwitnessed by this Division. A 48 hour notification must be sent prior to tank cleaning/rinsing (See Below for Notification Requirements). Excavation and cleaning shall be done according to manufacture and/or industry standards. Other agencies, including the local fire authority, may require additional permits, notifications, or inspections.

¹ SBCC 23.0722

² CCR 2670(e)

³CHSC 25292.05

Tank Inerting⁴

Flammable vapor must be purged from the UST to prevent an explosion or fire⁵. Lower Explosive Limit (LEL) readings shall be taken to confirm that the tank has been properly inerted.

Scheduling

UST closure inspection must be scheduled at least 10 days in advance with this CUPA by sending an e-mail to ustclerk@sbcfire.org. The e-mail shall contain the facility name, address, FA# (if available), CERS ID# (if available), and type of inspection in the subject line. The body of the e-mail will contain the requestor (e.g. contractor) name and contact information, and requested date and times.

Additional Inspections

Additional inspections will be billed on an hourly rate. Inspections extending beyond normal business hours will be charged as an after-hours inspection, with a 3-hour minimum charge.

Permit Expiration

A new permit will be required if the project extends beyond the permit expiration date. Contact the UST Front Counter at (909) 386-8464 for additional questions.

Additional Agency Requirements

It is the responsibility of the UST owner or duly authorized representative to notify other governmental agencies that may have applicable permit requirements. This includes, but is not limited to, the following: local fire agency, local building department and Air Quality Management District. Failure to meet notification and permit requirements will cause the removal to be cancelled.

⁴ CCR 67383.5

⁵ CCR 2672(b)(2), CCR 2672(c)(2)

Sampling

⁶The UST owner/operator shall demonstrate to the satisfaction of this Division that an unauthorized release has not occurred. Demonstration shall be based on the analytical results of soil samples obtained following UST removal. Soil sampling shall be witnessed by an inspector from this Division.

It is the responsibility of the owner or operator to conduct or arrange for the soil samples to be collected and analyzed. A report documenting removal activities and analytical results shall be prepared. It is recommended that owners or operators who are not familiar with the process hire a knowledgeable contractor/consultant. This Division is responsible for regulatory oversight only and will not collect samples on the applicant's behalf.

Samples will be taken in the following places (as applicable): ⁷

- Below each end of the tank invert
- Below the tank piping (including fittings, valves, elbows, joints, flanges, and flexible connectors)
- Beneath the product dispensers
- From stockpiled soil that has been removed from the excavation
- From areas where visual staining or discoloration is observed
- From areas where a vapor-monitoring instrument indicates the highest reading.

To sample below the tank invert, collect samples at a minimum of 2 feet vertically into native soil.

- For tank volumes less than 12,000 gallons—collect one soil sample at each end of the removed tank (two samples total)
- For tank volumes equal to or greater than 12,000 gallons—collect one soil sample at each end of the removed tank and one sample below the center of the removed tank (three samples total)

Soil stockpiled from the excavation shall be sampled and analyzed for the constituents of concern. If the stockpile will be disposed offsite, the disposal/recycling facility may have additional requirements. Typically, 3 discrete or appropriately composited samples will be required per each 50 yd³ stockpiled.

Soil samples will be analyzed for constituents of concern based on prior tank contents according to the Leaking Underground Fuel Tank (LUFT) Manual. At minimum, the analytes in the table below must be tested. The inspector may require additional sampling, especially if areas of discoloration or odor are noted.

⁶ CCR 2672(d)

⁷ Leaking Underground Fuel Tank (LUFT) Manual (2012): Refer to:
https://www.waterboards.ca.gov/water_issues/programs/ust/luft_manual/manual_dec2015.pdf

Minimum Constituents to be Analyzed

Gasoline

Analytes	Analytical Method(s)
BTEX, Naphthalene, MTBE, TBA	EPA 8260 B/C
EDC, EDB (<i>for pre-1992 release</i>)	EPA 8260 B/C
Organic lead (GC-ECD) (<i>Only if Pre-1992 release is detected</i>)	EPA 6010/6020 or EPA 7000/7010
TPH (<i>gasoline range: C₅-C₁₂</i>)	EPA 8015B GRO

Diesel #1 or #2

Analytes	Analytical Method(s)
BTEX, naphthalene, MTBE	EPA 8260 B/C
TPH (<i>diesel range: C₁₀-C₂₄</i>)	EPA 8015B DRO (C ₁₂ -C ₂₂)

Waste (Used) Motor Oil

Analytes	Analytical Method(s)
BTEX, Naphthalene, MTBE, TBA, chlorinated VOCs	EPA 8260 B/C
16 priority pollutant PAHs	EPA 8270 SIM
Wear Metals (<i>cadmium, chromium, nickel, lead, zinc</i>)	EPA 6010/6020 or EPA 7000/7010
TPH (<i>oil-range: C₂₃-C₃₂</i>)	EPA 8015B ORO (C ₂₃ -C ₃₂)

Jet A, JP5, JP8, Fuel oil #1 or #2

Analytes	Analytical Method(s)
BTEX, naphthalene, MTBE	EPA 8260 B/C
TPH (<i>diesel range: C₁₀-C₂₄</i>)	EPA 8015B ORO (C ₂₃ -C ₃₂)

Heavy Fuel Oils (e.g. bunker fuel)

Analytes	Analytical Method(s)
BTEX, Naphthalene, MTBE	EPA 8260 B/C
16 priority pollutants PAHs	EPA 8270 SIM
TPH (<i>oil-range: C₂₃-C₃₂</i>)	EPA 8015B ORO (C ₂₃ -C ₃₂)

BTEX Benzene, toluene, ethylbenzene, & xylene
 DRO Diesel-Range Organics by GC-FID
 EDB 1,2-dibromoethane
 EDC 1,2-dichloroethane
 GC-FID Gas Chromatography / Flame Ionization Detector
 GRO Gasoline-Range [or purgeable] organics by GC-FID
 Jet A Commercial Jet Fuel
 JP5 Jet Propellant 5 - Military Jet Fuel

JP8 Jet Propellant 8 - Military Jet Fuel
 MTBE Methyl tertiary butyl ether
 ORO Oil-Range Organics by GC-FID
 PAH Polycyclic aromatic hydrocarbon
 TBA t-Butyl alcohol
 TPH Total Petroleum Hydrocarbon
 VOC Volatile organic compound

Samples shall be prepared, stored, transported under chain-of-custody, and analyzed by appropriate Environmental Protection Agency (EPA)-approved methods. A California State-Certified Laboratory shall perform the sample analysis.

Detection of any unauthorized release shall be reported to this Division within 24 hours. Within five working days of detecting an unauthorized release, the owner or operator shall submit to the local agency through the California Environmental Reporting System an Unauthorized Release Report.⁸

⁸ CCR 2652(b)&(c)

Types of UST Closures

Closure by Removal

Permanent closure by removal applies to USTs in which the storage of hazardous substances has ceased and there is no planned use of the tanks within the next twelve (12) consecutive months. An inspector from the Division must witness and document the removal and soil sampling. Soil sampling and analysis is required to determine if contamination exists and if further assessment of contamination is necessary.

Closure in Place

The Division may allow for a UST to be closed in place if there is a written letter from a certified professional engineer indicating that the removal of the UST would affect the structural integrity of adjacent structures.

If approved, all ancillary UST equipment and piping shall be removed. If any piping cannot be removed without damaging structures or other pipes being used in a common trench, then the pipe shall be emptied of contents and capped.⁹ The UST shall be filled with an inert, solid material.¹⁰ A soil sampling workplan shall be submitted by a geologist proposing the location and soil sampling intervals of proposed borings.¹¹

If at any time there is a major construction and the reason originally cited for not removing the UST is no longer valid, then the UST shall be removed at that time.

Found Tanks

Found tanks are long-abandoned USTs that are discovered, that were never previously regulated (i.e. operation of UST ceased prior to January 1, 1984).

If there is any liquid in the UST, the liquid shall be removed immediately and a waste determinate shall be conducted to determine proper disposal method. The manifest shall be submitted with the workplan and closure application.

A proposal to close or remove the UST(s) shall be submitted to the Division within 30 days of discovery. Failure to submit plans within the allotted timeframe will result in the UST being classified as an Abandoned UST and may result in enforcement action.

Found tanks do not have to be entered into the California Environmental Reporting System (CERS)¹².

⁹ CCR 2672(c)(3)

¹⁰ CCR 2672(c)(4)

¹¹ CCR 2672(d)(2)

¹² Refer to https://www.waterboards.ca.gov/ust/cers/docs/cers_regulator_faq_abust.pdf; CHSC 25298, CCR 2670(f)

UST Closure Submittal Checklist

The Submittal Packet shall meet the minimum requirements, as listed below. Additional information may be requested.

- Removal**
- Closure in Place** (Additional Requirements Apply)
- Found Tank** (Additional Requirements Apply)

YES	NO	N/A	APPLICATION
			Facility Permits are Current: Existing facilities applying for a UST construction permit shall have a current Permit to Operate from this Division (i.e. all permit fees and any delinquent charges must be brought up to date prior to plan submittal).
			Construction Application: A complete and accurate Underground Tank Construction / Modification Application is submitted.
			Owner Acknowledgement Form: Completed by facility owner.
			Contractor Acknowledgement Form: Completed by the contractor who's CSLB is being submitted with this packet.
			Payment: Check, Money Order, Cash, or Credit Card Payments are accepted. <i>Note: Make checks available to "SBCFD". We do not accept any checks with alterations.</i>
YES	NO	N/A	CERTIFICATION
			<i>A copy of all appropriate, valid certifications for the proposed work shall be submitted for everyone conducting the work, including subcontractors.</i>
			Contractor's State License Board (CSLB): Class "A" General Engineering Contractor License, C-10 Electrical Contractor License, C-34 Pipeline Contractor License, C-36 Plumbing Contractor License, OR C-61 (D40) Limited Specialty Service Station Equipment and Maintenance Contractor License ¹³
			CSLB shall have a Hazardous (HAZ) Substance Removal Endorsement ¹⁴
			Certificate of Liability Insurance – Workers Compensation and Employer's Liability
YES	NO	N/A	SITE MAP
			A minimum of (2) sets of the site map were submitted. <i>One copy will be retained by this Division.</i>
			The facility name, street address, and city are present.
			¹⁵ The following details must be present on the site map: <ul style="list-style-type: none"> <input type="checkbox"/> North arrow <input type="checkbox"/> Building(s) onsite <input type="checkbox"/> Adjacent streets <input type="checkbox"/> All USTs (including ones that may not be removed) <input type="checkbox"/> All Dispensers connected to USTs <input type="checkbox"/> All Piping locations of UST system (including vent & vapor)

Reviewer Initials / Date: _____

¹³ CHSC 25284.1(a)(5)(D)(ii)

¹⁴ CCR 67383.3(f)(7)

¹⁵ CCR 67383.3(a)(1)(A)

Addition Submittal Requirements

Closure in Place

If the proposed method of closure is Closure in Place of a tank, then the following information must be submitted in addition to the UST Closure Submittal Packet.

YES	NO	N/A	ADDITIONAL REQUIREMENTS
			Letter from Professional Engineer: A letter stamped by a Professional Engineer certifying that removal of the UST will cause excessive structural damage to a structure or structures that are currently inhabitable, or would cause unreasonable risk to life, health or property. ¹⁶
			Work Plan: Must be prepared by a geologist and must show the locations and intervals at which soil samples.
			Site Map <i>The following information must be laid out on a site map:</i> <ul style="list-style-type: none"> • The site map must show the locations of the soil borings (slant boring or one boring on each end of the UST).¹⁷ • Any piping that cannot be removed because it might damage structures or other pipes that are being used (e.g. pipes contained in a common trench) shall be clearly drawn along with the locations at which those pipes will be capped.¹⁸

Found Tanks

If the closure application is for a UST that was discovered and has never been regulated, then the following must be submitted in addition to the UST Closure Submittal Packet. **NOTE:** Found tanks are NOT entered in CERS.

YES	NO	N/A	ADDITIONAL REQUIREMENTS
			CUPA APPLICATION: A complete and accurate form must also be submitted
			Hazardous Waste Disposal Records: Records must identify the hazardous waste removed from the tank.
			Site Map: Must have the GPS coordinates (latitude/longitude) of the location of the tanks.

Reviewer Initials / Date: _____

¹⁶ SBCC 23.07212

¹⁷ CCR 2672(d)(2)

¹⁸ CCR 2672(c)(3)

Prior to Closure Inspection

YES	NO	N/A	TANK CLEANING NOTIFICATION
			Hazardous Waste Tank Closure Notification Form: A complete and accurate form must be submitted to ustclerk@sbcfire.org no less than <u>48 hours</u> prior to tank cleaning/rinsing.
			Certification: If the certifications for the person certifying the Hazardous Waste Tank Closure was not submitted during the initial plan submittal, the certification must be submitted with this form.
			Lab Results: If the tank contents are being certified through chemical analysis of the residue, then the lab results must be attached to this form.

NOTE: Tank cleaning activities must NOT be conducted more than 48 hours prior to the UST Closure Inspection. Failure to abide by this will subject the site to another round of cleaning.

UST Closure Inspection Checklist

These are the minimum requirements for the Tank Closure Inspection. Additional requirements may be set by the inspector onsite. Photographs may be taken as part of the inspection process.

YES	NO	N/A	TANK CLEANING ¹⁹
			All residual liquids, solids, and sludges shall be removed and properly disposed prior to inspection.
			The UST system shall be pressure washed/rinsed and rinsate shall be properly disposed.
			Rinsate manifest shall be available for review during the inspection.
			Flammable vapors shall be removed using a vacuum type pump system by a properly certified contractor.
YES	NO	N/A	TANK INERTING ²⁰ <i>For tanks that previously held flammable materials</i>
			The oxygen concentration shall be the same as that of the ambient air (~20.8%).
			A properly calibrated CGI shall be onsite to document the LEL prior to removal or filling with inert material. CGI readings shall be obtained from the top, center, and bottom of the UST (<i>Must be done BEFORE inerting</i>).
			The concentration of flammable vapor shall be 0% of the LEL of the material the tank held.
			The UST must be inerted with a minimum of 22.2 lbs. of carbon dioxide, dry ice per 1,000 gallons of UST capacity.
			Cutting On-site: If the tank held a flammable or combustible material and the tank, piping, and/or appurtenances are cut onsite, non-sparking, cold-cutting tools or process shall be used.

¹⁹ CCR 2672(b)(1), CCR 2672(c)(1)

²⁰ CCR 67383.3

UST Closure Inspection Checklist *(Continued)*

YES	NO	N/A	TANK REMOVAL AND DISPOSITION²¹
			All piping, dispensers, vent lines and EVR Phase II equipment shall be removed prior to inspection.
			For USTs larger than 2,000 gallons, removal of the UST from the excavation and loading onto a truck for transport shall be accomplished using a crane. <i>Other equivalent equipment will only be allowed with pre-approval from this CUPA.</i>
			The UST shall be appropriately transported and disposed. Shipping papers or work orders shall be available documenting the intended disposition of the USTs.
YES	NO	N/A	SAMPLING
			<i>Additional samples may be required depending on site conditions (Inspector discretion will apply)</i>
			A minimum of (1) sample shall be taken from the fill end and (1) sample from the turbine end of the UST.
			At least (1) sample must have a GPS coordinate noted.
			Soil samples shall be collected from at least 2 feet below native soil (not from fill).
			A separate sample is required beneath each dispenser.
			A soil sample shall be taken every 20 linear feet of piping and/or at each joint, bend or connection.
			If the stockpile is disposed offsite, documentation of location shall be provided.
			Three (3) discrete or appropriately composited samples shall be taken each 50-cubic yards stockpiled.
			Excavated soil shall not be used as backfill unless it can be demonstrated that soil is not contaminated. <i>Total Petroleum Hydrocarbons (TPH) must not exceed 100 mg/kg with no volatile organic compounds or MTBE detected.</i>
			Samples shall be prepared, stored, transported under chain-of-custody, and analyzed by appropriate Environmental Protection Agency methods. A California State-Certified Laboratory shall perform the sample analysis.
YES	NO	N/A	TANK CLOSURE IN PLACE
			Piping associated with the UST shall be removed and properly disposed of. Any piping that has been approved to remain shall be emptied of all contents and capped. ²²
			The UST shall be filled with an approved inert material and nonhazardous substance. ²³

²¹ CCR 67383.3

²² CCR 2672(c)(3)

²³ CCR 67383.4(d)

Tank Closure in CERS

The following changes shall be made in CERS within 30 days of the Closure inspection. If CERS is not updated within 90 days of removal, then a proxy submission will be conducted to properly record the tank closure. **FOUND TANKS ARE NOT REPORTED IN CERS.**

YES	NO	N/A	UST ELEMENT
			UST FACILITY OPERATING PERMIT APPLICATION <u>Type of Action</u> : If all USTs are removed or closed in place, then select "Permanent Facility Closure." Otherwise, select "Confirm/Update Information."
			TANK INFORMATION²⁶: Must be updated for EACH Tank removed 1) <u>Type of Action (UST Tank)</u> : Select "UST Removal" or "UST Permanent Closure on Site." 2) <u>Date UST Installed</u> : This field cannot be blank. 3) <u>Date UST Permanently Closed</u> : Enter UST removal or closure on site date.
			MISCELLANEOUS STATE-REQUIRED DOCUMENTS: <u>UST Site-Unauthorized Release / Contamination Report</u> : This form must be uploaded into CERS if sampling results detect contamination. ²⁷
YES	NO	N/A	TANK ELEMENT
			HAZARDOUS WASTE TANK CLOSURE CERTIFICATION : Complete form must be submitted in CERS.

Update the following elements only if the facility continues to be regulated under Hazardous Material Business Plan requirements according to California Health and Safety Code 25507.

YES	NO	N/A	FACILITY ELEMENT
			BUSINESS ACTIVITIES : For sites where all USTs are removed, "No" shall be selected for the question "Does your facility own or operate underground storage tanks?"
YES	NO	N/A	INVENTORY ELEMENT
			HAZARDOUS MATERIAL INVENTORY : If facility continues to be subject to the Business Plan, remove UST tanks from inventory.
			SITE MAP : Remove the tanks from map or indicate "removed."
YES	NO	N/A	PLANS ELEMENT
			If facility continues to be subject to the Business Plan, review plan and remove any reference to responses specific to USTs. If facility is no longer subject to the Business Plan, then this element does not have to be updated

²⁶ Refer to <https://cers.calepa.ca.gov/wp-content/uploads/sites/11/2019/04/CERS-FAQ-UST-Reporting-Closed-Tanks-When-No-Business-Lead-User-is-Available.pdf>

²⁷ CCR 2652(c); form found at <https://www.waterboards.ca.gov/ust/forms/>

UST Closure Report Checklist

Detection of any unauthorized release shall be reported to this Division within 24 hours. This Division will evaluate all data and determine if any further corrective action is required.

Submit a UST Closure Report within 60 days of the UST removal/soil sampling date to ustcompliance@sbcfire.org. Failure to submit all required documentation within the allotted time frame may result in enforcement action.

The job will not be considered complete until all closure documentation is received.

YES	NO	N/A	PLOT PLAN
			The plan shall be to scale.
			The plan shall have north orientation, the locations of the former UST systems including the tanks, dispensers, and piping relative to permanent landmarks/buildings.
			The plan shall have the location, depth and sample ID for each soil sample taken. At least one sample shall have a GPS coordinate attached.
YES	NO	N/A	DOCUMENTATION
			Copy of the rinsate manifest shall be submitted.
			Copy of the UST disposal/destruction certificate shall be submitted. ²⁸
			Copy of the laboratory analysis with chain of custody.
YES	NO	N/A	CLOSURE REPORT
			Summary of field activities including soil sampling.
			Description of soil type and estimated depth to groundwater.
			Summary of soil sampling results.

²⁸ CCR 2672(b)(3)