



**COMMUNITY AND ECONOMIC
DEVELOPMENT DEPARTMENT**
Division of Environmental Health

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GUIDELINES FOR PERMANENT CLOSURE OF UNDERGROUND STORAGE TANKS

GENERAL CRITERIA

It is the responsibility of the owner of the underground storage tank (UST) to ensure that the closure process is completed in a lawful manner. Permanent closure requirements can be found in Title 23, California Code of Regulations (CCR), Division 3, Chapter 16, Article 7, and in Title 22, CCR, Division 4.5, Chapter 20, Article 1. In most cases, the owner will retain the services of a qualified and licensed contractor to perform all work at the site.

The State of California Contractors License Board (CSLB) establishes minimum criteria for the removal or repair of USTs. Effective January 1, 1992, all contractors bidding on or performing the removal of UST's must hold the *Hazardous Substance Removal Certification* issued by the CSLB. Under current State Water Quality Resources Control Board policy, only those contractors holding one of the following classifications are properly licensed to contract for the installation and/or removal of UST's:

- *Plumbing Contractors (C-36)* - Plumbing contractors may install any UST that provides a service to a building. Any other type of UST may only be installed by a General Engineering Contractor (A).
- *Limited Specialty Contractor (C-61 D-40)* - Service Station Equipment contractors may install fuel UST's at service stations or any other site up to a capacity of 20,000 gallons.
- *General Engineering Contractor (A)* - General engineering contractors may install or remove UST's for any purpose whatsoever at any location.
- *General Building Contractor (B)* - General building contractors may install or remove UST's only if such work is performed under contract to construct or remodel a building that houses people, animals or chattels, and the work involves the use of three or more unrelated trades.

All questions on this issue should be directed to the licensing staff of the CSLB at (800) 321-2752, P.O. Box 26000, Sacramento, CA 95826 or at:

<https://www2.cslb.ca.gov/OnlineServices/CheckLicenseII/CheckLicense.aspx>

Site security must be maintained during the removal process. Excavations opened during or after the UST removal operations shall be safeguarded by fencing until backfilled.

It is the responsibility of the contractor to ensure that all work is performed in a safe manner. All contractors must have an established safety program including a site-specific safety plan during all work. All contractors performing work must implement all safety standards established by the State of California, Department of Industrial Relations, Occupational Safety and Health Administration (Cal OSHA). For more information and details regarding Specific Safety Orders, contact Cal OSHA Consultation at (800) 963-9424.

OBTAINING PERMITS AND NOTIFICATION REQUIREMENTS

A completed *UST Permit Application: Install, Upgrade, Repair, & Closure* form must be submitted to and approved by the local Certified Unified Program Agency (CUPA) prior to conducting any activity associated with the removal of a UST system. Merced County Community and Economic Development Department, Division of Environmental Health (MCDEH) is the local CUPA for the County of Merced and its incorporated cities.

Once MCDEH has reviewed and approved the application, an associated permit fee invoice will be issued to the individual designated as the payee. Once paid, a copy of the approved permit will be issued to the permit filer and/or the UST owner or his/her representative. Once the permit has been issued, work on the site may begin.

No less than 48 hours prior to the UST removal, the removal contractor and/or UST owner or operator must schedule a date and time of the UST removal/closure with the CUPA.

Be advised that all UST removal projects require completion of a *Hazardous Waste Tank Closure Certification* form. This form must be completed and returned to MCDEH within 30 days of the UST removal/closure process.

TANK CLEANING & DISPOSAL

All USTs previously containing hazardous materials are considered hazardous waste. All USTs require decontamination utilizing the identified cleaning process provided below. After removal, the UST's must be transported under a bill of lading to a licensed recycling facility.

It shall be noted that all tank rinsate is hazardous waste and requires transportation by a licensed hauler to a Department of Toxic Substances Control (DTSC) permitted hazardous waste treatment, storage, or disposal facility (TSDF).

Documentation from the tank recycling facility showing receipt of the UST(s) must be provided to MCDEH, along with the hazardous waste manifest within 30 days of the UST removal.

It shall be noted that the State Fire Marshall's office prohibits former USTs to be utilized for aboveground storage tank purposes. Therefore, removed USTs must either be recycled or disposed of as hazardous waste. They cannot be re-used for any type of aboveground storage.

OPTION 1 – UST RECYCLING DECONTAMINATION FOR NON-HAZARDOUS WASTE DISPOSAL

1. All exterior visible parts of each UST must be inspected by the contractor prior to beginning the interior tank cleaning. If it is determined the UST was compromised, any hole(s) on the tank shall be capped or plugged.
2. Any tank associated piping having contents must be drained into the tank (if possible) prior to UST and piping removal.
3. The interior of the tank must be triple-rinsed using a high-pressure washer and approved detergent.
4. All sludge, residue and rinsate must be removed from the tank for disposal as a hazardous waste and transported under manifest.

5. If a UST requires venting, the contractor shall ground the UST and implement venting equipment.
6. After the UST has been properly cleaned, it is to be inerted utilizing the following procedure prior to removal:
 - a. A UST previously used for storage of flammable liquids shall be purged of oxygen using an inert gas such as carbon dioxide (dry ice), nitrogen, or helium.
 - b. If dry ice is utilized, a minimum of 22.2 pounds of dry ice per 1,000 gallons of the UST capacity shall be used to inert the tank.
 - c. If a liquid or gas inerting agent is used, the dispensing device must be bonded to the UST.
 - d. After inerting, the **oxygen level** inside the UST must be **below 10%** and a lower explosive limit (LEL) level of **no higher than 5%** must be achieved. The UST contractor must provide a calibrated combustible gas indicator (CGI) meter for monitoring verification.

OPTION 2 - UST DISPOSAL HAZARDOUS WASTE TANK DISPOSAL

1. Prior to removal, the UST exteriors must be inspected for any compromised areas.
2. The UST is to be inerted with oxygen levels of less than 10% being achieved and maintained.
3. The UST must be transported under hazardous waste manifest to a DTSC permitted TSDF. Contact DTSC at 800-728-6942 to obtain information on permitted facilities.

OPTION 3 - UST CLOSURE IN PLACE

If MCDEH approves UST closure in place, the following requirements shall be complied with:

1. All former liquid contents, solids, and/or sludge must be removed and disposed of as hazardous waste under manifest.
2. The UST must be triple-rinsed using an approved detergent. All rinsate is to be disposed of as a hazardous waste under manifest.
3. All piping associated with a UST shall be removed and disposed of unless it is shown that removal may endanger structures or other piping in use in the same trench area. In such cases, piping shall be emptied and capped prior to final closure.
4. If visible observations of the UST itself and the UST pit area appear free of any soil contamination and soil/groundwater sampling reveal samples are clear of contaminants that may require further assessment, the UST can be abandoned by filling it with an inert material such as a sand or concrete slurry mixture. The exterior tank top surface areas can then be backfilled to grade level with clean fill dirt.

SOIL SAMPLING PROCEDURES

All samples must be analyzed by a laboratory having State of California Water Resources Control Board Environmental Laboratory Accreditation Program (ELAP) certification.

Table 16-1: Individual Analytes and Methods for Soil and Groundwater Samples at LUFT Sites

Source Fuel / Product Type	Analytes	Analytical Method(s)	Comments
Gasoline	BTEX, naphthalene, MTBE, TBA (plus EDC, EDB for pre-1992 release) ¹	EPA 8260B/C	organic lead (GC-ECD) only if pre-1992 product is present
Jet A/JP5/JP8, Diesel #1 or #2, Fuel oil #1 or #2	BTEX, naphthalene, MTBE	EPA 8260B/C	MTBE ³
Heavy Fuel Oils (bunker fuel, etc.)	BTEX, MTBE, naphthalene	EPA 8260B/C	MTBE ³
	16 priority pollutant PAHs ²	EPA 8270 SIM	
Waste (Used) Motor Oil	BTEX, naphthalene, chlorinated VOCs, MTBE, TBA	EPA 8260B/C	
	16 priority pollutant PAHs ²	EPA 8270 SIM	
	Wear Metals: cadmium, chromium, nickel, lead, zinc	EPA 6010/6020 or EPA 7000/7010	Soil only

Notes:

- BTEX Benzene, toluene, ethylbenzene, and xylene
- EDB 1,2-dibromoethane
- EDC 1,2-dichloroethane
- Jet A Commercial jet fuel
- JP5 Jet Propellant 5, military jet fuel
- JP8 Jet Propellant 8, military jet fuel
- MTBE Methyl *tertiary* butyl ether
- PAH Polycyclic aromatic hydrocarbon
- TBA t-Butyl alcohol
- VOC Volatile organic compound

- 1) Samples to be analyzed for lead scavengers EDC and EDB only if release is pre-1992. If age of release is unknown, analyze for both oxygenates (MTBE and TBA) and scavengers.
- 2) 16 priority pollutant PAHs = naphthalene, acenaphthene, acenaphthylene, anthracene, phenanthrene, fluorene, chrysene, fluoranthene, pyrene, benzo(b)fluoranthene, benzo(a) pyrene, benzo(k)fluoranthene, benzo(a)anthracene, indeno(1,2,3-c,d)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene.
- 3) MTBE to be analyzed at all LUFT sites unless regulatory agency has determined that the tank contained only diesel or jet fuel per California Health & Safety Code (H&SC) §25296.15(a).

Upon removal of UST(s) and/or associated piping, soil samples must be collected and analyzed by a state-certified laboratory for verification that an unauthorized release has not occurred. The number and location of the samples must be approved by the CUPA representative on site.

If groundwater is present in the tank bed excavation, the collection of at least one groundwater sample will also be required for laboratory analysis.

GENERAL SOIL SAMPLING PROCEDURES

1. If site conditions allow, direct access sampling shall be performed utilizing soil boring equipment. If tank pit shoring is not provided, a backhoe bucket shall be utilized for tank pit soil sampling.
2. The individual performing soil sampling shall be prepared to obtain samples using a hand auger or other similar equipment for sampling beneath piping runs and/or fuel dispensers.
3. All samples must be taken a minimum of 2 feet into native soil under tanks, piping and dispensers as directed by MCDEH.
4. All collected samples shall be collected utilizing approved sampling methods and containers for shipment to a state-certified laboratory. Samples shall be sealed and labeled for transportation in insulated containers using an approved cooling mechanism capable of maintaining a temperature of no more than 39° F during transportation to the to the laboratory. All samples are to be delivered to a State certified laboratory within 48 hours of sampling.
5. All samples must be accompanied by a chain-of-custody form.

Number and Location of Samples

The minimum number of soil samples required will be based upon the size of the tank being removed and the length of piping associated with each tank. All piping must be exposed and prepared for removal unless otherwise approved by MCDEH.

The following criteria apply:

Tank Size	Minimum # of Samples	Location of Samples
Less than 5,000 Gallons	One per Tank	Fill or Pump End
5,000 - 12,000 Gallons	Two per Tank	One on Each End
Over 12,000 Gallons	Three per Tank	Ends & Middle of Tank
Piping	One	Every 20 Linear Feet and/or Under Pipe Fittings
Dispensers	One	Below Each Dispenser

For permanent closure in place, a minimum of one (1) boring will be taken as close as possible to the midpoint beneath the tank using a slant boring or other appropriate method.

PAPERWORK AND CLOSURE DOCUMENTATION

All of the following must be submitted to MCDEH **within 30 days** of the UST removal:

1. Copies of laboratory analytical results from all samples collected as part of the UST closure.
2. A copy of the chain-of-custody form which accompanied all collected samples for lab analysis.
3. A copy of any consultant summary reports generated in conjunction with the UST removal process.
4. All copies of hazardous waste manifests generated as a result of transport and disposal of rinsate and/or UST(s).
5. Documentation of the UST final disposal, including a copy of the completed *Hazardous Waste Tank Closure Certification* form.

MCDEH will verify if the owner/operator has demonstrated to our satisfaction that the tank closure, removal or abandonment in place, and soil sampling complies with statute and regulation, and will notify the owner/operator accordingly with either a final closure letter, or a letter indicating remaining deficiencies that require correction.

In addition to the above, any case of a documented release of hazardous materials will result in a referral to the Regional Water Quality Control Board – Fresno Division for follow up and remedial activity coordination.

All closure-related records and documentation will be maintained by MCDEH as required by statute and regulation, in electronic and/or hard copy form.