



PUBLIC HEALTH SERVICES
ENVIRONMENTAL HEALTH DIVISION
Guidelines For The Removal Of
Underground Storage Tanks

These guidelines apply to the owner of an underground storage tank (UST) subject to the permanent closure requirements of the California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Storage Tank Regulations, Article 7, Closure Requirements, and their agents, who are removing a UST and/or its associated piping.

1. Obtain a Facility Modification Application from Orange County Health Care Agency (OCHCA) Environmental Health. Applications may be obtained in person at the address provided below, or by calling Environmental Health at (714) 433-6000 or downloaded from the following website: <https://www.ochealthinfo.com/sites/hca/files/import/data/files/14626.docx>.
2. At least 30 calendar days prior to the expected UST removal date, submit a completed Facility Modification Application, four sets of plans (drawing size not to exceed 11x17 inches) and a closure fee to Environmental Health at the office address given below. Plans must include:
 - a. A site location map, tank information/details, and
 - b. A plot plan that:
 - i. Identifies site location, inclusive of cross streets and a North arrow,
 - ii. Shows existing structures, utilities, and all existing USTs and associated piping,
 - iii. Identifies the USTs and/or piping to be removed,
 - iv. Clearly identifies the entire length of piping proposed for closure in place, if appropriate, See Section 7 (c) below for a description of piping that may be closed in place, and
 - v. Includes the size of the USTs to be removed and the types of hazardous substances that have been stored in the USTs.
3. Obtain closure and/or excavation permits from the appropriate agencies such as the County Planning and Development Services Department or city building department, the Orange County Fire Authority or local fire department and the South Coast Air Quality Management District (AQMD).
4. Submit a copy of the Hazardous Substance Removal Certification issued to the contractor performing the removal work. Section 7058.7 (e) of the Business and Professions Code states "A contractor may not install or remove a UST unless the contractor has passed the hazardous substance certification examination developed pursuant to this section." A contractor who is not certified may bid on or contract for the removal of a UST, if the work is performed by a contractor who is certified.
5. Schedule a UST removal inspection with Environmental Health's Hazardous Materials Mitigation Section. Environmental Health staff must be onsite to observe the condition of the UST(s) during removal and direct sampling to determine whether a reportable unauthorized release has occurred. Provide at least 48-hour notice to Environmental Health when scheduling an onsite inspection. A concurrent inspection must be scheduled with the Orange County Fire Authority or local fire department, which must also be represented at the UST removal. Alternate accommodations must be made in advance of field activities if Fire personnel decline the opportunity to be onsite during tank removal activities.

6. When removing a UST system and/or its piping, the owner of the UST(s) must comply with applicable provisions of the California Code of Regulations (CCR) Division 3, Chapter 16, Article 7, Closure Requirements. These include provisions of Section 2672 (b) & (c) which including the following:
 - a. All residual liquid, solids, or sludge from the UST and/or its piping shall be removed and handled as hazardous waste or recyclable material;
 - b. If the UST to be removed contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the USTs shall be inerted to levels that shall preclude explosion or to such lower vapor levels as may be required by the Orange County Fire Authority or local fire department. (Note: A representative from the Orange County Fire Authority or local fire department must be present prior to initiating this procedure.); and,
 - c. The UST and/or its associated piping shall be removed and disposed. Where removal of piping might damage structures or other in use piping is contained in a common trench, that piping may be closed in place after being emptied of all contents and capped.

7. Per CCR Section 2651 (d), the owner of a UST must demonstrate upon closure that no unauthorized release has occurred. This demonstration shall be based on sensory observations, monitoring equipment readings, soil sample analysis and/or water sample analysis. Sample collection activities are to be performed by staff provided by the project consultant or the laboratory doing the sample analysis.
 - a. Samples must be obtained from the excavations of any UST and/or piping removed. Regulations require two samples, one at each end of each UST removed and samples for each 20 linear feet of pipe trenching. Where closure in place of piping is necessary and where soil samples cannot otherwise be obtained, soil borings placed near the piping trench may be required. Further, in an effort to obtain data required for evaluation under State Water Board Resolution No. 2012-0062, sidewall samples from depths between 0-10 feet below ground surface may be required.
 - b. Samples are to be collected, handled and analyzed at the owner's expense per CCR Section 2649 and as indicated below:
 - i. The laboratory doing the sample analysis or the project consultant must provide adequate supplies of thin-walled stainless steel or brass cylinder sample holders (for intact soil sample collection) with fitted polyethylene caps, labels, plastic bags and Teflon sheets. Glass jars are not permitted. A cooler or ice chest with ice is also required to be onsite;
 - ii. When a sample is collected, each end of the collection cylinder should first be covered with a Teflon sheet. Caps should then be placed on the ends of the cylinder and an identifying label attached. Next, the cylinder should be placed in a cooler or ice chest to be chilled. The sample should be placed in a sealed plastic bag before chilling where needed to prevent water damage to the label;
 - iii. The samples should be transported, per arrangements made by the tank owner, to a State Certified Laboratory soon after the completion of sampling. A Chain of Custody form, completed by Environmental Health staff directing the sampling, must accompany the samples to the laboratory. The receiving laboratory should indicate in the designated laboratory section of the Chain of Custody form whether the samples were received in a chilled state and whether County seals were intact upon arrival, and;

- iv. Samples collected at diesel or gasoline storage sites must be analyzed by an appropriate method for total petroleum hydrocarbons (TPH). TPH (GC/FID) with carbon chain identification is recommended for diesel sites. Total purgeable petroleum hydrocarbons [TPPH (GC/MS)] as gasoline is recommended for gasoline sites. Samples collected in association with tanks in use prior to 1992 must be analyzed for organic lead if free product is present. In addition, analysis by EPA Method 8260B full scan is required to analyze for volatile organic compounds (VOCs) that include benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2-dichloroethane (EDC [or 1,1-DCA]) and 1,2-dibromoethane (EDB), ethanol, Methyl Tertiary Butyl Ether (MTBE) and all other fuel oxygenates.
 - v. Samples collected at waste oil tank storage sites must be analyzed for TPH with carbon chain identification using EPA Method 8015 or for total recoverable petroleum hydrocarbons using EPA Method 1664, for full scan VOCs including BTEX, EDC, EDB, MTBE and all other fuel oxygenates, and chlorinated solvents by EPA Method 8260B, and for polycyclic aromatic hydrocarbons using EPA Method 8310 or 8270C (SIM Mode)¹. In addition, soil samples must be analyzed for wear metals (cadmium, chromium, nickel, lead, and zinc). Detection limits for all reported constituents must meet appropriate data quality objectives.
8. The detection of a reportable unauthorized release, based on field observations and/or the results of the soil and groundwater sample analysis, shall require compliance with the reporting requirements of CCR Section 2652 and the initial abatement and corrective action requirements of Articles 5 and 11 of Title 23, Division 3, Chapter 16, CCR.
 9. The owner of the UST should provide site security to prevent unauthorized public access into excavated areas. This security may include temporary fencing or a twenty-four (24) hour security guard.
 10. The owner of the UST shall have equipment onsite available to control any vapor emissions. The equipment may include bulldozers to backfill excavations and/or tarps to cover contaminated soil.
 11. Documentation required to be forwarded to this Agency after UST removal includes:
 - a. A copy of the certificate of UST destruction,
 - b. Copies, signed by the receiving State permitted facility, of all Uniform Hazardous Waste Manifests used to transport the residual or rinseate liquid, solids, or sludge waste removed from the tanks, and
 - c. Original (wet) copies of the laboratory analytical report, and the white copy of the OCHCA Chain of Custody form, sent with samples to the laboratory, with all required information completed by the laboratory.

¹ Analytical methods listed above are subject to revision or update by EPA. Suggested test methods may require updating as analytical procedures are promulgated.

- d. Information regarding backfill procedures, including source and volume of backfill material, purchase receipts for imported fill, and laboratory results. Sampling for fill material must follow the Department of Toxic Substances Control's Clean Imported Fill Material Guidance (attached). Note, sampling of quarry material mined directly from natural resources (i.e., previously unused, not recycled and not reclaimed) is not required; however, a supplier verification letter and purchase and delivery receipts must be submitted.

Where the above requirements are successfully completed and an unauthorized release requiring further action is not discovered, a completion of a UST closure letter will be issued to the UST owner by Environmental Health. Should an unauthorized release be discovered, Environmental Health's Land and Water Quality Section will open a UST cleanup case and, upon satisfactory completion of the required corrective action, a letter of remedial action completion will be issued.

If you have any questions or need additional information, please contact the Environmental Health Land and Water Quality Section at (714) 433-6000.

Attachment: Department of Toxic Substances Control's Clean Imported Fill Material Guidance

Information Advisory

Clean Imported Fill Material



October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed.

It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contami-

nation and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:

Target Compounds

Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location
Volume of Borrow Area Stockpile	Samples per Volume
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards + 1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

materials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary

to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all com-

pounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.