

CONTENTS

REQUIREMENTS FOR HAZARDOUS WASTE TANK SYSTEMS

DEFINITIONS

APPLICABILITY OF HAZARDOUS WASTE TANK SYSTEM REQUIREMENTS

NEW TANK SYSTEM REQUIREMENTS

- **Design and Installation of New Tank Systems or Components Holding RCRA Hazardous Waste**
- **Written Assessment Requirements for Tanks holding Non-RCRA Hazardous Waste or RCRA-Exempt Waste, or Tiered Permit Tank System**
- **Reassessment Requirements after Tank System Modification**
- **Limited Exemption from Engineering Assessment**

SECONDARY CONTAINMENT REQUIREMENTS

EXISTING TANK SYSTEM REQUIREMENTS

DAILY TANK SYSTEM INSPECTIONS

OTHER OPERATIONAL REQUIREMENTS

TABLES

TABLE 1	APPLICABILITY AND GENERAL REQUIREMENTS FOR HAZARDOUS WASTE TANK SYSTEMS
----------------	--

FIGURES

FIGURE 1	FLOWCHART: NEW HAZARDOUS WASTE TANK SYSTEMS OR COMPONENTS
FIGURE 2	FLOWCHART: HAZARDOUS WASTE TANK SYSTEMS SECONDARY CONTAINMENT REQUIREMENTS

APPENDICES

APPENDIX A	PE CHECKLIST FOR NEW HAZARDOUS WASTE TANK SYSTEMS
APPENDIX B	AST CERTIFICATION AND ENGINEERING ASSESSMENT EXEMPTION NOTIFICATION FORM AND INSTRUCTIONS
APPENDIX C	COMMON ISSUES AND SCENARIOS (EXAMPLES)
APPENDIX D	SAMPLE HAZARDOUS WASTE TANK SYSTEM DAILY INSPECTION LOG, INSTRUCTIONS FOR SAMPLE HAZARDOUS WASTE TANK SYSTEM
APPENDIX E	HAZARDOUS WASTE TANK SYSTEM ASSESSMENTS CERTIFICATION REQUIREMENTS

REQUIREMENTS FOR HAZARDOUS WASTE TANK SYSTEMS

There is much confusion regarding the hazardous waste tank regulatory requirements. This guidance document is intended to help clarify the requirements for both owners and operators of hazardous waste tank systems and engineers who are certifying tank systems. The hazardous waste tank system regulations are in Title 22 of the California Code of Regulations (22 CCR), Chapter 15, Article 10, Sections 66265.190-202. The hazardous waste tank regulations cover not only tanks but many other components (ancillary equipment) that may be used with or without tanks to treat, convey and/or store hazardous waste. Listed below are some definitions typically associated with hazardous waste tanks.

DEFINITIONS (See 22 CCR Section 66260.10 for full definitions)

"Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves and pumps, that is used to distribute, meter or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), between hazardous waste storage and treatment tanks to a point of disposal onsite, or to a point of shipment for disposal offsite.

"Existing tank system" or "existing tank component" means an unmodified tank system and / or component of known and documentable age that is used for the transfer, storage or treatment of hazardous waste and that will have been in operation for 15 years or more by July 1, 2006. After this date, all tank systems shall be managed as "new tank systems," with few regulatory exceptions for some unmodified "existing tanks systems" (See Table 1.).

"Leak-detection system" means a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary containment structure. Such a system must employ operational controls (e.g., daily visual inspections for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure.

"Modified" means a change made to a tank or tank system. Modification of a tank or tank system will affect the classification and applicable regulatory requirements of a tank or tank system. Installation of secondary containment that meets the requirements of regulation is considered modification. The replacement of the following items with identical or functionally equivalent parts or components does not qualify as modification: pumps (same type and capacity), plumbing or piping components such as unions/elbows/gaskets, valves and check valves, and piping and valve hangers and supports.

"New tank system" or "new tank component" means a tank system and / or component that will be used for the transfer, storage or treatment of hazardous waste and that will have been in operation for less than 15 years by July 1, 2006 or any modified tank or tank system. After this date, all tank systems shall be managed as "new tank systems," with few regulatory exceptions for some unmodified "existing tanks systems" (See Table 1.).

"**Secondary containment**" for tanks shall include one or more of the following devices pursuant to 22 CCR 66265.193(d):

- (1) a liner (external to the tank);
- (2) a vault;
- (3) a double-walled tank; or
- (4) an equivalent device as approved by the Department; see 22 CCR 66265.193(m) for examples.

"**Sump**" means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serves to collect hazardous waste for transport to hazardous waste storage, treatment or disposal facilities.

"**Tank**" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

"**Tank system**" means a hazardous waste transfer, storage or treatment tank and its associated ancillary equipment and containment system.

APPLICABILITY OF HAZARDOUS WASTE TANK SYSTEM REQUIREMENTS

Various types of generators use hazardous waste tank systems at their facilities. Some are small quantity generators (SQG), and some are large quantity generators (LQG). Some treat their own waste on-site, while most do not. The applicability of hazardous waste tank requirements is dependent upon the quantity of hazardous waste generated per month (i.e., SQG and LQG), onsite hazardous waste treatment activities (i.e., Conditionally Authorized and Permit by Rule), and the status of the tanks (i.e., new or existing). Therefore, when determining which tank regulations is applicable, one should:

- Make sure the tank is a hazardous waste storage tank, which includes aboveground and on-ground tanks, and underground hazardous waste treatment tanks.
- Determine generator status, LQG / SQG. Note: Generation of greater than 1 kg / month of Acutely or Extremely Hazardous Waste qualifies a facility as an LQG.
- Determine Tiered Permitting status (i.e., CA or PBR), if applicable.
- Apply the appropriate tank standards.

Hazardous Waste Tank standards generally apply to:

- Owners/operators of onsite treatment unit tank systems authorized under the following onsite hazardous waste "Tiered Permit" treatment tiers:
 - Conditional Exemption (CE) if the facility is a large quantity generator; [HSC §25201.5(d)(9)]
 - Conditional Authorization (CA) even if the facility is a small quantity generator; [HSC §25200.3(c)(4)]
 - Permit-by-Rule (PBR) even if the facility is a small quantity generator. [22CCR §67450.3(c)(9)(F)]
- Tank systems holding Excluded Recyclable Material where no local ordinance regulates the storage of hazardous material and requires secondary containment of hazardous waste storage areas. [HSC §25143.9(c)]
- Tanks, sumps, and other collection devices used in conjunction with drip pads and regulated under Article 17.5 of Chapter 15 of Division 4.5 of Title 22, CCR. [22CCR §66265.190(c)]

Table 1 presented below can be used to help determine which hazardous waste requirements are appropriate for your tank system. The specific requirements of these hazardous waste tank requirements will be discussed in detail in the following sections.

Table 1. Applicability and General Requirements for Hazardous Waste Tank System

Small Quantity Generators	Large Quantity Generators And Conditionally Authorized & Permit by Rule Waste Treaters
Situation: <u>Less than</u> 1000 kg (270 gallons or 2200 pounds) of hazardous waste was generated throughout the facility in a month AND no more than 6000 kg (1620 gallons or 13,200 pounds) of waste is ever stored at the facility, THEN:	Situation A): <u>More than</u> 270 gallons or 2200 pounds of hazardous waste was generated throughout the facility in any month; and/or Situation B): CA or PBR waste treater, THEN:
Tank Standards See 40 CFR 265.201, refs. 22 CCR 66262.34(d)(2) & 40 CFR 262.34(d)(3)	Tank Standards See 22 CCR 66265.190 through .202
Standards apply to all tanks/tank systems: - Do not need Engineer's Assessment or an above ground tank (AST) Certification & Engineering Assessment Exemption Notification. - Must be labeled with the words "Hazardous Waste," and the accumulation start date must be documented on the tank or in the facility operating log. - Uncovered tanks need two feet freeboard unless equipped with a containment structure (e.g. dike or trench) $\geq$ volume of top two feet of tank. - Must inspect at least once each operating day: - The discharge control equipment (e.g., waste feed cutoff, by-pass & drainage systems). - Data gathered from monitoring equipment (e.g., pressure and temperature gauges). - Waste level in uncovered tanks. - Must inspect at least weekly: - The construction materials of the tank to detect corrosion or leaking of fixtures or seams. - The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes) to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).	Standards depend on installation date: - Before 7-1-1991 with <u>proper</u> secondary containment and leak detection per 22 CCR 66265.193 standards: No PE certification required, unless modified. - After 7-1-1991 must have secondary containment, leak detection and an initial PE certification (22 CCR 66265.192)* - Must inspect at least once each operating day: - Overfill/spill control equipment, aboveground portions of tank system, construction materials and the area immediately surrounding the tank system. - Data gathered from monitoring equipment. - Waste level in uncovered tanks (freeboard). *Used Oil or Waste Anti-Freeze Tanks May use three-year "AST Certification & Engineering Assessment Exemption Notification" (See Appendix B), in lieu of PE certification, if completed, approved, and available on site, with: >100% secondary containment and leak detection program - written leak detection program - daily inspection logs

Engineering Certification requirements:

- Must include a report that contains the information specified in 22CCR 66265.192 (k) items 1 through 11 and the certification language from CCR 66270.11(d).
- On-site Treatment under Conditional Exemption (CE) includes requirements for integrity assessments of ancillary equipment every two years under certain conditions see 25201.5(e)(1).

NEW TANK SYSTEM REQUIREMENTS (22 CCR 66265.192)

"New tank system" or "new tank component" means a tank system or component that will be used for the transfer, storage or treatment of hazardous waste. Except for a few regulatory exceptions for some unmodified "existing tanks systems" all tanks are new tanks. (See Table 1.).

The following requirements for new hazardous waste tank systems apply to RCRA and non-RCRA LQGs and facilities operating under a tiered permit (CA and PBR). The owner or operator of a new tank system and/or component shall obtain a written assessment reviewed and certified by an independent, qualified, professional engineer, registered in California. An installation inspector or a professional engineer must also inspect the installation of the tank system to ensure the work was done properly. New tank systems must have the proper secondary containment and leak detection equipment per 22 CCR 66265.193 installed before operating the tank. The engineer would generally be involved during design, construction, and installation. Once certified, the engineer's assessment report is a legal document that attests to the system's design and installation. This report must be kept onsite for an inspector's review.

Figure 1, below, can be used to help determine whether an integrity assessment (i.e., tank certification) is required for your new tank system.

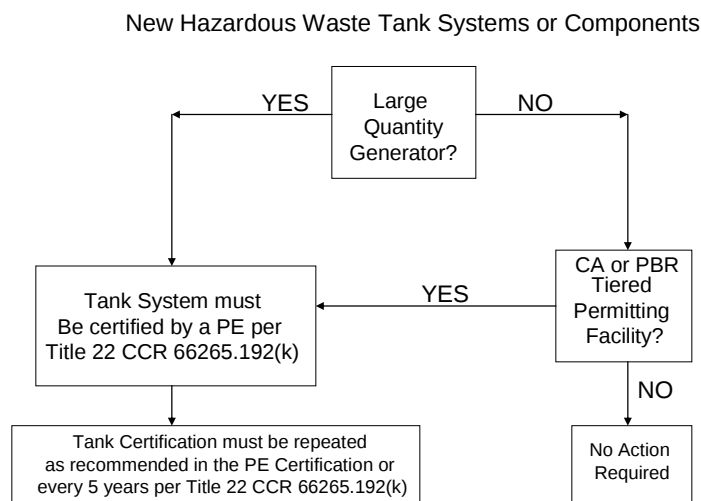


Figure 1. New Hazardous Waste Tank Systems or Components

If the above flowchart indicates that your new tank system(s) requires certification, then, the design of the new tank system should include the items found 22 CCR 66265.192(a), (b), (c), (d), (e), and (f), and the final Engineering Certification must include all of the items required in 22 CCR 66265.192 (k).

Design and Installation of New Tank Systems or Components Holding RCRA Hazardous Waste

Prior to the tank system being placed in service, its design and construction must satisfy specific requirements, and an independent, qualified, California-registered professional engineer must certify the tank system. A written record of the results of the engineer's assessment must be kept on file at the tank facility. This assessment shall include, at a minimum, the following information required by 22 CCR 66265.192(a):

- 1) Design standard(s) according to which the tank(s) and ancillary equipment are or will be constructed;
- 2) Hazardous characteristics of the waste(s) to be handled;
- 3) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of:
 - (A) Factors affecting the potential for corrosion, including but not limited to:
 1. Soil moisture content;
 2. Soil pH;
 3. Soil sulfides level;
 4. Soil resistivity;
 5. Structure to soil potential;
 6. Influence of nearby underground metal structures (e.g., piping);
 7. Stray electric current; and,
 8. Existing corrosion-protection measures (e.g., coating, cathodic protection), and
 - (B) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:
 1. Corrosion-resistant materials of construction such as special alloys or fiberglass reinforced plastic;
 2. Corrosion-resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes); and
 3. Electrical isolation devices such as insulating joints and flanges;
- 4) For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and
- 5) Design¹ considerations to ensure that:
 - (A) Tank foundations will maintain the load of a full tank;
 - (B) Tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone; and
 - (C) Tank systems will withstand the effects of frost heave.

For RCRA tanks installed and certified as new tanks, re-assessment is based on the expiration date of the assessment or service life of the tanks.

¹ All design aspects should incorporate seismic considerations.

Written Assessment Requirements for Tanks holding Non-RCRA Hazardous Waste or RCRA-Exempt Waste, or Tiered Permit Tank System

When the tank is initially placed into service a written assessment is required to be completed by an independent, qualified, California-registered professional engineer. These items are in addition to the assessment items outlined above for newly designed tank system, and/or for use in reassessment of a tank system that has been previously certified or has become subject to the assessment requirements. This assessment must include the following information required by 22 CCR 66295.192(k):

- 1) Tank configuration (i.e., horizontal, vertical), material of construction, and gross capacity (in gallons).
- 2) Design standard(s), if available, according to which the tank and ancillary equipment were or will be constructed and all of the following information:
 - (A) Material of construction;
 - (B) Material thickness and the method used to determine the thickness;
 - (C) Description of tank system piping (material, diameter);
 - (D) Description of any internal and external pumps; and
 - (E) Sketch or drawing of tank including dimensions.
- 3) Documented age of the tank system (if tank was previously used), if available, (otherwise, an estimate of the age).
- 4) Description and evaluation of any leak detection equipment.
- 5) Description and evaluation of any corrosion protection equipment, devices, or material.
- 6) Description and evaluation of any spill prevention or overfill equipment.
- 7) Description and evaluation of secondary containment for the tank system (secondary containment must meet minimum standards as specified in 22 CCR 66265.193(c-f) or subsections (j)(1) through (j)(3) of section 22 CCR 66265.192).
- 8) Hazardous characteristics of the waste(s) that have been or will be handled.
- 9) Results of a visual inspection² by a Professional Engineer, including:
 - (A) Weld cracks or breaks;
 - (B) Scrapes of protective coatings;
 - (C) Corrosion;
 - (D) Any structural damage or inadequate construction or installation such as cracks, punctures, damaged fittings. All discrepancies shall be documented in the assessment and remedied before the tank system is placed in use.
- 10) The results of tightness test(s). Tank system integrity or leak test requirements must be in compliance with all local requirements. Prior to conducting a tank system integrity test or leak test, contact local agency staff for local requirements.
- 11) Estimated remaining service life of the tank system based on the findings of items (1) through (10) listed above.

² This inspection must be completed prior to placing the tank in use and requires that an independent, qualified professional engineer or qualified installation inspector has inspected the required items and has submitted the inspection results to the independent, qualified professional engineer registered in California who will be completing the required system certification.

Any person signing a tank system certification shall make the following certification in accordance with 22 CCR 66270.11:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

The assessment shall be valid for a maximum period of five (5) years or the remaining service life of the tank system, as stated in the engineer's assessment, whichever is less.

Reassessment Requirements after Tank System Modification

If changes have been made to the tank system or new components have been added to the tank system subsequent to an assessment, the tank system shall be reassessed pursuant to subsection 66265.192(k) unless the changes meet the requirements in Title 22 CCR 66265.192(l) and (m), as follows:

(l) The assessment specified in subsection (k) of this section is not required for the replacement of the following identical or functionally equivalent tank system parts or components:

- (1) Pumps (same type and capacity);
- (2) Plumbing or piping components such as unions, elbows, tees and gaskets;
- (3) Valves and check valves;
- (4) Piping and valve hangers and supports;

(m) Replacement of identical or functionally equivalent tank system parts or components not listed in subsection (l) of this section shall be approved by the CUPA prior to replacement or changeout. If the tank system part or component is determined to be identical or functionally equivalent by the CUPA, the assessment specified in subsection (k) of this section is not required. The owner or operator shall provide the CUPA, or the California Department of Toxic Substances Control (DTSC) if there is no CUPA or the CUPA requests that the DTSC make a determination, with the following information in writing so that a determination can be made:

- (1) Name, address, and EPA identification number of the facility;
- (2) Date of planned replacement;
- (3) Description part or component to be replaced;
- (4) Description of the tank system and type of waste(s) handled;
- (5) Description of how the part or component is identical or functionally equivalent to the part or component to be replaced.

A “PE Assessment Checklist” for new hazardous waste tank systems is included in Appendix A

Limited Exemption from Engineering Assessment

Tanks and tank systems may be granted an exemption from the engineering assessment by a CUPA. This exemption is good for a period of up to three years. In order for this exemption to be granted as specified in 22 CCR 66265.192(j), all of the following minimum criteria must be met:

- The tank system must hold only non-RCRA waste or must be exempt from RCRA permitting requirements if holding RCRA wastes;
- The design and installation of the tank system must be approved by the CUPA;
- The tank system must have secondary containment capable of containing 100 percent of the contents of the tank and ancillary piping volume;
- If the tank system is exposed to precipitation, the secondary containment system must have sufficient capacity (in addition to its tank contents) to contain run-on and infiltration from a 25-year, 24-hour rainfall event;
- The tank system secondary containment shall be provided with a leak detection system that is designed and operated so that it will detect either the failure of the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours.

A sample AST Certification and Engineering Assessment Exemption Notification Form and associated instructions are presented in Appendix B. This example Engineering Assessment Exemption is focused on used oil and anti freeze tanks because they are some of the most common systems that might qualify for this exemption. Please contact your local CUPA to acquire their equivalent and authorized version of this form.

SECONDARY CONTAINMENT REQUIREMENTS (22 CCR 66265.193)

For new tank systems, secondary containment is required before placing the tank into operation. For existing tank systems the deadline to retrofit with secondary containment has passed and secondary containment is now required. Secondary containment must be designed, installed, and operated to prevent contamination and releases to the environment. The minimum design standards are listed in section 66265.193(b-f) and include the piping and ancillary equipment.

The secondary containment system must have a leak detection system designed and operated so that it will detect a leak or release from the tank system as soon as possible.

All LQGs of hazardous waste accumulating hazardous waste in tanks or LQG tiered permit facilities with tank systems used to treat hazardous waste (i.e., CA & PBR) are required to provide secondary containment for the tank systems. For these facilities ancillary equipment and sumps are also required to have secondary containment.

Typically, floors used to contain spills and drips from manufacturing processes are not considered part of a tank system provided that the floors are kept clean and are properly maintained. Wet floors which are not properly maintained, upon which hazardous wastes accumulate, or which are designed to convey drips and spills directly to a waste treatment system will be regulated as a tank system and must meet the requirements of Title 22 CCR 66265.192 and 66265.193.

Ancillary equipment for existing tank systems at facilities that operate under a conditional authorization (CA) or conditional exemption (CE) of the tiered permit program may be exempt from secondary containment requirements (especially if they are a SQG). California Health and Safety Code (H&SC) sections 25200.3(c)(4)(A) and 25201.5(e)(1) provide exemptions for ancillary equipment for CA and CE facilities if secondary containment is not otherwise required, and ancillary equipment is visually inspected for leaks on a daily basis with records of the inspections maintained on-site (wastes must be non-RCRA and facility must not be a large quantity generator). The ancillary equipment is still subject to the Professional Engineer certification requirements identified in 22 CCR 66265.191(g). This certification must be repeated every two years.

Figure 2 (Page11) can be used to help determine whether secondary containment is required for your tank system.

The local agency (CUPA) may accept an alternative to the containment/leak detection standards under specific conditions [reference section 66265.193(l-m)]. The conditions are:

- a) must be an aboveground or on-ground non-RCRA tank system,
- b) designed and operated to prevent a release out of the system,
- c) capable of detecting and collecting release, and
- d) approved in writing by the CUPA.

The regulation identifies several secondary containment alternatives or options in section 66265.193(m); including tank berms; piping inside troughs/lined trenches with leak detection; and double-walled piping with leak detection.

Common issues and typical scenarios (i.e., examples) associated with secondary containment issues as related to hazardous waste tank systems are presented in Appendix C.

Hazardous Waste Tank Systems Secondary Containment Requirements

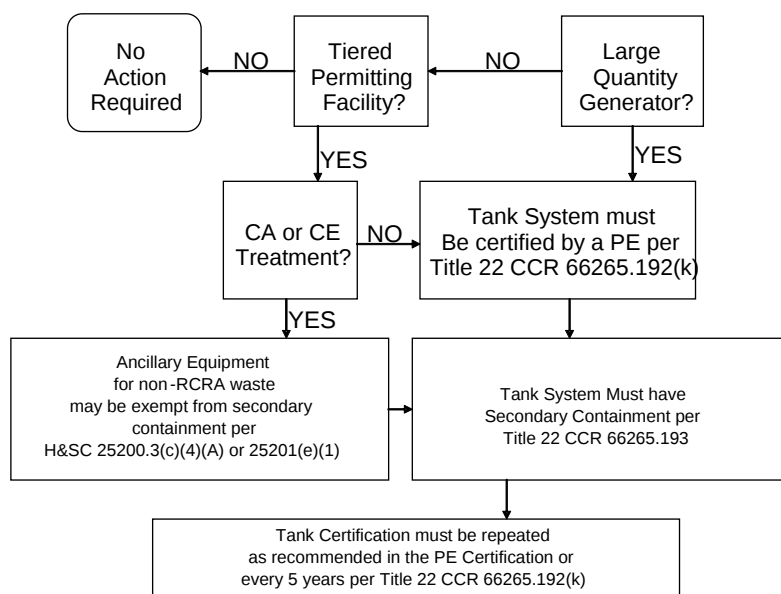


Figure 2. Hazardous Waste Secondary Containment Requirements

EXISTING TANK SYSTEM REQUIREMENTS (22 CCR 66265.191)

Although there are still definitions and some specific regulatory language for Existing Hazardous Waste Tanks Systems that do not have secondary containment, these systems are rare, and will not be addressed in this document. In most cases following the requirements outlined for new tanks is a good path to insure compliance with hazardous waste tanks standards.

DAILY TANK SYSTEM INSPECTIONS (22 CCR 66265.195)

Generators with hazardous waste tank systems must perform and document inspections of the following items at least once each operating day:

- Overfill/spill control equipment of tank system to ensure good working order;
- Aboveground portions of the tank system, if any, to detect corrosion or leaks;
- Data gathered from monitoring equipment and leak detection equipment (e.g. pressure and temperature gauges, monitoring wells, etc.) to ensure that the tank system is being operated according to its design;
- Construction materials and the area immediately surrounding the externally accessible portions of the tank system including secondary containment structures to detect erosion or signs of leaks;
- For uncovered tanks, the level of waste in the tank to ensure compliance with freeboard requirements.

A sample hazardous waste inspection log is presented in Appendix D.

OTHER OPERATIONAL REQUIREMENTS

Spill Cleanup — Spilled or leaked waste and accumulated precipitation must be removed from secondary containment systems within 24 hours or, if removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours, in as timely a manner as is possible to prevent harm to human health or the environment. [22CCR §66265.193(c)(4)]

Air Emissions — LQGs must also comply with 22 CCR, Division 4.5, Chapter 15, Articles 27, 28, and 28.5. [22CCR §66262.34(a)(1)(A)]

Underground Storage Tanks (UST) — Owners/operators of UST systems must also comply with the applicable requirements of Title 23, CCR relating to UST systems. [22CCR §§66265.191(f), 66265.192(i), and 66265.193(k)]

APPENDIX A

PE ASSESSMENT CHECKLIST

Facility Name: _____

Date of Assessment: _____

Date Assessment Received: _____

Type of Unit(s): _____

Page #

--The Assessment references the standards listed in CCR Title 22, 66265.192. _____

--The discipline of the PE is appropriate³ for the type of system and the license is clear⁴ _____

Title 22, 66265.192 (a)

--The Assessment contains the signatory statement listed in 66270.11 _____

--Foundation, structural support, seams, connections and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be transferred, stored or treated, and corrosion protection so that it will not collapse rupture or fail. _____

(a)(1)--Design standards according to which the tanks are or will be constructed are included _____

(a)(2)--Hazardous waste characteristics of the waste(s) that have been or will be handled are listed _____

(a)(3)--(If applicable) Determination by a corrosion expert of:

A) Factors affecting the potential for corrosion, including but not limited to:

1. Soil moisture content
2. Soil pH
3. Soil sulfides level
4. Soil resistivity
5. Structure to soil potential
6. Influence of nearby underground metal structures
7. Stray electric current
8. Existing corrosion-protection measures

And

³ See Department of Toxic Substances Control clarification letter (Appendix E) for additional information on identifying a qualified engineer.

⁴ The following web site may be utilized to look up license information. http://www.dca.ca.gov/pels/l_lookup.htm

B) Type and degree of external corrosion that are needed consisting of one or more of the following:

1. Corrosion-resistant materials (i.e. fiberglass)
2. Corrosion-resistant coating with cathodic protection
3. Electrical isolation devices

(a)(4)-- Not Applicable if this is an above ground tank system.

(a)(5)--Design considerations to ensure that:

- A) Tank foundations will maintain the load of a full tank
- B) Tank systems will be anchored to prevent floatation or dislodgement where the tank system is placed in a saturated zone, or is located within a seismic fault zone
- C) Tank systems will withstand the effects of frost heave

Title 22, 66265.192(b)(1-6)

--Independent, qualified professional engineer's inspection for the presence of the following after installation;

- 1) Weld breaks
- 2) Punctures
- 3) Cracks
- 4) Corrosion
- 5) Other structural damage

Title 22, 66265.192(c)

-- Not Applicable if this is an above ground tank system

Title 22, 66265.192(d)

-- All new tanks and ancillary equipment shall be tested for tightness prior to being placed in use

Title 22, 66265.192(e)

--Ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction

Title 22, 66265.192(f)

--If applicable, provide the type and degree of corrosion protection necessary. Independent corrosion protection specialist oversight

Title 22, 66265.192(h)(1-2)

--On ground or above ground tank systems authorized under PBR or CA shall have an assessment based on 66265.192(k) is on file at the facility⁵

⁵ This evaluation may require a cross check to other tanks or systems at a facility that are on a different certification schedule. This may be information that an owner or operator, rather than the certifying engineer, should provide.

Title 22, 66265.192(k)(1)--A drawing of the tank(s) configuration as well as description of the materials of construction and gross capacity is included _____

(k)(2)—Design standards, if available, for the tanks and ancillary equipment, as well as the following: _____

(A)--The material of construction _____

(B)--The material thickness and method used to determine the thickness _____

(C)--Description of tank system piping (material, diameter) _____

(D)--Description of any internal and external pumps _____

(E)--sketch of drawing of tank(s) including dimensions _____

(k)(3)--Documented (or estimated, if unknown) age of the tank system- _____

(k)(4)--Description and evaluation of any leak detection equipment
(Not applicable if the tank system and associated piping is to be inspected daily for leaks and corrosion) _____

(k)(5)--Description and evaluation of any corrosion protection equipment, devices of materials _____

(k)(6)--Description and evaluation of any spill prevention or overfill equipment _____

(k)(7)--Description and evaluation of the secondary containment for the tank system (including ancillary equipment).⁶ _____

(k)(8)--Hazardous waste characteristics of the waste(s) that have been or will be handled is included _____

(k)(9)--Independent, qualified professional engineer's inspection of the system for the following; _____

(A) Weld cracks or breaks _____

(B) Scrapes of protective coatings _____

(C) Corrosion _____

(D) Any structural damage or inadequacy construction or installation cracks, punctures damaged fittings. All discrepancies shall be documented in the assessment and remedied before the tank system is placed in use _____

k(10)--All new tanks and ancillary equipment shall be tested for tightness prior to being placed in use. The results of the test(s) shall be documented in this assessment _____

k(11)--Estimated remaining service life of the tank system based on findings of subsections k(1) through k(10) _____

⁶ The secondary containment must be meet minimum standards as specified in subsections (j)(1) through (j)(3) of this section including applicable secondary containment for ancillary equipment as required in subsection 66265.193(f).

APPENDIX B**AST CERTIFICATION AND ENGINEERING ASSESSMENT EXEMPTION
NOTIFICATION FORM AND INSTRUCTIONS**

AST CERTIFICATION & ENGINEERING ASSESSMENT EXEMPTION NOTIFICATION

PERMIT NO. _____
 DATE _____
 TANK CAPACITY _____
 CONTENTS _____
 SECONDARY CONTAINMENT
 TYPE _____
 YEAR INSTALLED _____
 U/L APPROVED (Y/N) _____
 TANK ID (if applicable) _____
 INSPECTOR _____
 DATE OF REQUEST _____

BUSINESS NAME _____

ADDRESS _____

CITY/ZIP _____

I certify that the aboveground used oil/waste antifreeze tank meets the requirements of the California Code of Regulation (CCR)

for exemption from the Professional Engineering Assessment [reference Title 22 CCR section 66265.192(j)].

Owner/Operator Signature _____ Print Name _____ Date _____

The Local Fire Marshal installation, usage, and design approval are attached, OR The Local Fire Marshal has reviewed this aboveground tank for conformance with applicable regulations.

Fire Marshal Approval Signature: _____ Print Name _____ Date _____

The Hazardous Materials Division (HMD) conditionally approves the installation of the used oil/waste antifreeze aboveground storage tank as long as *you comply with the following terms and conditions:*

TERMS AND CONDITIONS

1. The aboveground tank, installed after July 1, 1991, must contain **used oil or waste antifreeze** only (**a non-RCRA waste**) as defined in HSC section 25250.1 and has no connected piping.
2. The local Fire Marshal approved and/or permitted the installation, usage, and design per municipal codes and the tank operator maintains documentation supporting this requirement.
3. The primary tank is surrounded with greater than 100% secondary containment.
4. If the tank system is exposed to precipitation, the secondary containment must, in addition to the requirement of item 3 above, be able to handle a 25 year, 24 hour rainfall event, with no intrusion or flooding problems. The HMD strongly advises that the tank system be completely covered to prevent such problems, following all local building and zoning requirements.
5. The facility must have a written leak detection program and **daily** inspection logs onsite as required in 22 CCR sections 66265.194-195 for review by HMD inspectors. Ensure that appropriate controls and practices are in-place at all times to prevent spills, leaks, or overflows from occurring. The secondary containment should be kept empty and dry, except when there is a leak or spill, at which time the secondary containment must be thoroughly cleaned out within 24 hours. The cause of a leak or spill would need to be determined and corrective actions taken (refer. 22 CCR section 66265.196).
6. The tank must be installed and maintained on a non-permeable surface, i.e. concrete (in good repair) or sealed asphalt (in good condition).
7. The operator needs to revise their Business Plan site map, if applicable.
8. The facility should maintain a photocopy of this notification onsite to show to an inspector during facility inspections.

Provided you do not change the configuration of the tank, this exemption is good for 3 years from the date of request for exemption above. In the future, if you make any changes or modifications to the tank system, submit a description of the proposed changes in writing to the HMD 30 days before making the changes to ensure compliance with applicable regulations. Attached is a fact sheet developed by the HMD for your information regarding the regulation of hazardous waste tank systems.

This approval does not exempt your facility from compliance with additional requirements that may be enforced by other local, State, or Federal agencies with regards to storage of hazardous materials in a tank system.

HMD Supervisor's Signature _____ Date Signed _____

AST Certification & Engineering Assessment Exemption Notification Instructions

Purpose: The purpose of this sample form is to provide an example of a mechanism for Businesses to request an exemption, and for the CUPA to grant the exemption, from the Professional Engineer Assessment for an aboveground storage tank (AST) containing **used oil** or **waste antifreeze**.

Procedures: During an inspection of a business which stores used oil or antifreeze in an AST, the CUPA Inspector shall evaluate the tank to determine if it meets the minimum requirements for the exemption, as listed in the TERMS AND CONDITIONS section on the form.

The CUPA Inspector shall fill out a separate form for each AST qualifying for the exemption.

The form is to be used in the same manner as a Compliance Inspection Report (CIR). The CUPA Inspector will fill out the Business information at the top of the form, as well as the information in the box in the upper right hand corner of the form:

- PERMIT NUMBER: Enter facility's permit number
- DATE: Enter current date
- TANK CAPACITY: Enter the total volume of the tank
- CONTENTS: Enter the name of the chemical held within the tank (**used oil** or **antifreeze** only)
- SECONDARY CONTAINMENT TYPE: Enter the type of secondary containment, i.e. double walled tank; 12 inch concrete berm-12' x 8' (include the approximate dimensions); metal tray-4'x8'x11"; etc.
- YEAR INSTALLED: Enter the year that the tank was put into service at its current location
- U/L APPROVED (Y/N): Enter "Y" if it is U/L approved, "N" if it is not
- TANK ID (if applicable): Enter the tank ID number that the facility has issued to the tank. If there is no facility tank number enter "N/A"
- INSPECTOR: CUPA Inspector's name
- DATE OF REQUEST: Enter the date when the facility requested the exemption in writing

Certification Box:

The Owner/Operator needs to sign, print his/her name and date the form under the statement: "I certify that the above ground used oil/waste antifreeze tank meets the requirements of the California Code of Regulation (CCR) for exemption from the Professional Engineering Assessment [reference Title 22 CCR section 66265.192(j)]."

The Owner/Operator will need to provide either one of the following:

Attach proper documentation for the Local Fire Marshal installation, usage, and design approval for the tank, i.e. a Fire Marshall permit of installation, a Fire Marshal inspection report approving the installation,

OR

Have the Fire Marshal sign the form where it asks for the Fire Marshal Approval Signature, along with their printed name and the date the form was signed.

Attach the proper Fire Marshal documentation, if required and submit all to your supervisor for approval. A signed copy of the form will be sent to the facility, and the original will be sent to the file.

APPENDIX C

FREQUENTLY ASKED QUESTIONS, COMMON ISSUES AND TYPICAL SCENARIOS

Common Issues:

What are the major components of a tank system?

In general, hazardous waste tank systems include three parts:

- a. the primary tank equipment where the waste is accumulated, stored, transferred, or treated,
- b. the secondary containment device or unit,
- c. the ancillary equipment (eg. piping, trench drains, pumps, valves, etc).

Is a sump subject to the secondary containment requirements?

A sump is defined in Title 22 CCR 66260.10 as any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serves to collect hazardous waste for transport to hazardous waste storage, treatment or disposal facilities. If a hazardous waste generator intentionally uses a sump to collect and manage hazardous waste onsite, then the sump is a tank and subject to regulation. However, if a sump is in place as an emergency containment unit, designed to contain and collect an unplanned release or spill, the sump is serving as a secondary containment device [see also Title 22 CCR 66265.190(b)]. Since the sump's purpose is for emergency or secondary containment, it is not a hazardous waste tank, provided it is emptied and cleaned out as soon as possible (usually immediately, or within 24 hours of a spill, depending on the circumstances). A sump serving as a secondary containment device must be provided with a means of leak detection to alert the operator as to a leak or spill of hazardous waste from a tank system.

Is aboveground piping required to have secondary containment?

Aboveground piping connected to a hazardous waste tank is regulated as ancillary equipment. Piping installed completely above the surface of the ground that has all sides of the piping, flanges, valves, pump connections, etc. readily and easily accessible for visual inspection by the tank operator may be exempted from secondary containment requirements (Title 22 CCR 66265.193(f)). Daily visual inspections of the aboveground piping must be documented in facility logs by the tank operator in order to exempt the piping (Note: there are some exceptions to this – see 66265.193(f) for details).

Is underground piping required to have secondary containment?

Underground piping must have the proper secondary containment installed and a means of reliable leak detection in place.

Scenarios:

Example A: A large quantity waste generator uses a tank system to collect and store hazardous waste and their tank was installed prior to July 1, 1991 without secondary containment that meets regulatory standards.

The generator must perform an integrity assessment of the tank system per Title 22 CCR 66265.191(g) and determine if it is still fit for use. If it passes the integrity assessment, secondary containment must be installed in accordance with all local agency requirements. The independent engineer that performs the initial integrity assessment may design a secondary containment and leak detection system and monitor the installation and issue final certification of the retrofitting work.

Example B: A tank operator has a combination system whereby they have some aboveground tanks with underground piping used to accumulate and treat hazardous waste onsite prior to discharge to the sewer. The tanks have 100% secondary containment but the underground piping does not. The tank berm areas show signs of deterioration and the original coating on the concrete is worn away and cracked.

The operator should take the following three steps:

1. If economically feasible, have the underground piping integrity assessed per Title 22 CCR 66265.191(g) and if it passes, retrofit with secondary containment and leak detection. If secondary containment of the piping is too costly, close the underground piping under oversight by the local CUPA and other pertinent local agencies.
2. Redesign the ancillary equipment (e.g. piping) to be completely aboveground with a leak detection program/system. The redesign requires an independent professional engineer's certification per Title 22 CCR 66265.192.
3. Evaluate the deterioration at the tank berm areas to determine the integrity of the secondary containment, cause(s) of the deterioration, and the potential release of waste constituents into the environment. Repair and recoat the deteriorated berm areas under the supervision of an independent engineer if determined to be a major modification or significant repair (Title 22 CCR 66265.196(g)). Report any release into the environment to the local CUPA and other relevant agencies, in accordance with Title 22 CCR 66265.196(e).

Example C: A hazardous waste tank system was installed after July 1, 1991 and may have proper secondary containment. The operator has no independent engineer's assessment report available.

The operator needs to organize all available tank records, specifications, and as-built drawings and have an independent professional engineer certify the tank system in accordance with Title 22 CCR 66265.192. The final engineer's assessment report, should certify the tank system, secondary containment, and leak detection program, and substantiate the operation of the tank system.

APPENDIX D**SAMPLE HAZARDOUS WASTE TANK SYSTEM DAILY INSPECTION LOG****INSTRUCTIONS FOR SAMPLE HAZARDOUS WASTE TANK SYSTEM**

HAZARDOUS WASTE TANK SYSTEM DAILY INSPECTION LOG

(AS REQUIRED BY 22 CCR 66265.195)

Business Name: _____

Month: _____

Business Address: _____

Year: _____

Tank System ID: _____

D A Y	Is 2 nd ary containment free of waste and liquid?		Is the system free of corrosion and evident damage?		Are pipes, valves and pumps free of leaks and in good condition?		Do open tanks have at least 2 ft. of free board?		Is leak detection program/ equipment working?		Inspected by	Comments/Corrective actions taken
	<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>	<u>YES</u> or N/A	<u>NO</u>	<u>YES</u>	<u>NO</u>		
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												

INSTRUCTIONS FOR SAMPLE HAZARDOUS WASTE TANK SYSTEM DAILY INSPECTION LOG

Instructions: This form may be used to conduct the required self-inspection of a hazardous waste tank system. The inspection by the tank system operator or owner is required on a **daily** basis pursuant to the California Code of Regulations (CCR), Title 22, section 66265.195. Generators of hazardous waste that are large quantity generators or onsite waste treatment operations using a tank system to manage waste are required to conduct these inspections. The tank system inspection records are required to be onsite, available for inspector review, and kept for at least three years. If the tank system or a component of the tank system (i.e. piping, pumps, valves, secondary containment, sump, etc.) is in poor condition or unfit for service, the tank system operator must take proactive steps to investigate, repair, and/or replace the equipment, parts, or components as required in section 66265.196 of Title 22 CCR.

Title 22 CCR 66265.195 Tank System Inspections

- (a) The owner or operator shall inspect, where present, at least once each operating day:
 - (1) overflow/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;
 - (2) the aboveground portions of the tank system, if any, to detect corrosion or releases of waste;
 - (3) data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design;
 - (4) the construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation); and
 - (5) for uncovered tanks, the level of waste in the tank, to ensure compliance with section 66265.194(b)(3).
- (b) The owner or operator shall inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:
 - (1) the proper operation of the cathodic protection system shall be confirmed within six months after initial installation, and annually thereafter; and
 - (2) all sources of impressed current shall be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).
- (c) The owner or operator shall document in the operating record of the facility an inspection of those items in subsections (a) and (b) of this section.

APPENDIX E

HAZARDOUS WASTE TANK SYSTEM ASSESSMENTS CERTIFICATION REQUIREMENTS⁷

Hazardous waste tank systems authorized pursuant to Permit by Rule, Conditional Authorization, or Conditional Exemption are required to be assessed periodically. Hazardous waste tank assessments must be certified by an independent, qualified professional engineer that is registered in the state of California in accordance with California Code of Regulations (Cal. Code Regs), title 22, § 66270.11(d), (as referenced in Cal. Code Regs. title 22, §§ 66265.191 and 66265.192). It is the Department of Toxic Control's interpretation that a qualified engineer is one whose license (Title or Practice) allows that individual to engage in the work of assessing whether or not a tank system meets the operating requirements specified in the applicable regulations. Further, the individual with the appropriate license must also have expertise within the area they are practicing (Cal. Code Regs, title 15 division 5, § 415 [Practice within area of competence]).

All tank system assessments that are certified by a qualified professional engineer who is registered in the state of California will be reviewed with these requirements in mind. Reviews will be done to ensure assessments are complete (i.e., all relevant areas of the regulations pertaining to tank system assessments are addressed), and that all relevant information is included in the assessments (e.g., drawings, tank material and thickness information, volume calculations, and so on). The Department of Toxic Substances Control will also be looking at the qualification of the individuals signing certifications. Civil, Structural, and Geotechnical registered professional engineers may sign for entire systems. However, they may need to rely upon other professionals for specific areas of competence. In cases where a Civil, Structural, or Geotechnical registered professional engineer is not signing off for the tank system assessment, then all engineers contributing to the assessment must sign. These other registered engineers can sign off only for parts of a tank certification within their specific discipline. Certifications must include the name and license number for each engineer who is approving a section or sections of an assessment.

⁷ This guidance statement was sent, by letter, from Kim F. Wilhelm, Chief, Statewide Compliance Division, Department of Toxic Substances Control, to Michael Dorsey, Chief, San Diego County, Department of Environmental Health, Hazardous Materials Division on October 28, 2005.