# B. Other Draft Regulations

1. Partial draft of regulations including sections dated January 13, April 24, May 3, May 8, 1984

كمحبله

# Underground Tank Regulations Outline

California Administrative Code
Title Waters
Chapter Water Resources Control Board
Subchapter Underground Tank Regulations

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#### Article 1. General

Adopt new section to read:

xxl0. Applicability

- a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous materials from underground tanks. These regulations define new and existing tanks; provide a list of regulated substances; establish construction, monitoring, release reporting, repair and closure standards; and specify variance request procedures.
- b) Persons who own one or more underground tank storing hazardous materials shall comply with these regulations except as provided in Section xx of Article xx. If the operator of the tank(s) is not the owner then the owner shall enter into a written contract with the operator requiring the operator to: monitor the tank; maintain appropriate records; implement reporting procedures as required by the permit; and properly close the tank.
- c) Counties shall implement the regulations in this subchapter without modification except as provided in Section xx of this Article and Section xx of Article xx, through the issuance of permits to underground tank owners. A permit may be issued for each underground tank, several tanks or for a facility. A city may, by ordinance, assume the responsibility for implementing within its boundaries the provisions of this subchapter.
- d) All owners of underground tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 or Article 4 depending on whether the tank is new or existing, respectively. However, owners

of existing underground tanks which meet the construction and monitoring standards of Article 3 may be issued permits pursuant to these standards in lieu of the standards of Article 4. In addition, all owners of underground tanks subject to these regulations must comply with the release reporting requirements of Article 5, the closure requirements of Article 7, and the permit application requirements of Article 10.

Adopt new section to read:

### xxll. Exemptions

The following activities shall be exempt from the provisions of this subchapter:

- a) Underground storage tanks that are located within the jurisdictions of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, meets the requirements of Article 3 and Article 4 or equivalent standards to implement Health and Safety Code Sections 25284 and 25284.1 provided that:
  - 1) The ordinance, as it may be amended, continues to meet the requirements of Article 3 and Article 4 or equivalent standards; and
  - The county or city issues permits for underground tanks pursuant to the ordinance.
- b) Underground storage tanks that are used for the storage of hazardous substances used for the control of external parasites of cattle and subject to the supervision of the county agricultural commissioner if the county agricultural commissioner determines, by inspection prior to use, that the tank provides a level of protection equivalent to that required by Section 25284 of the Health and Safety Code, if the tank was installed after June 30, 1984, or protection equivalent to that provided by Section 25284.1 of the Health and Safety Code if the tank was installed on or before June 30, 1984.
- c) Underground storage tanks that are located on a farm and only store motor vehicle fuel which is used only to propel vehicles used primarily for agricultural purposes. Vehicles used primarily for agricultural purposes is meant to include non-licensed vehicles and vehicles utilized in the production of agriculture at the farm site.

- d) Underground storage tanks that are used for aviation or motor vehicle fuel storage and are located within one mile of a farm and the tank is used by a licensed pest control operator, as defined in Section 11705 of the Food and Agricultural Code, who is primarily involved in agricultural pest control activities.
- e) Structures such as sumps, separators, storm drains, catch basins, oil field gathering lines, refinery pipelines, lagoons, evaporation ponds, well cellars, separation sumps, lined and unlined pits, sumps and lagoons. Sumps which are a part of a monitoring system required under Article 3 or Article 4 are not exempted by this section. These sumps would be considered part of the secondary containment or leak detection system of the primary containment and would be required to meet the appropriate construction criteria.
- f) Underground storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the tank has been issued a hazardous waste facilities permit by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or granted interim status under Section 25200.5 of the Health and Safety Code.

## Article 3. New Tank Construction and Monitoring Standards

## xx30. Applicability

- a. This article contains statewide minimum standards for the construction, installation, and monitoring of new underground tanks that contain hazardous substances.
- b. Sections xx31 and xx32 specify construction and monitoring standards for all new tank systems. New tank systems that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections xx33 and xx34 in lieu of those specified in Sections xx31 and xx32, respectively. However, if the construction standards in Section xx33 are used, then the monitoring standards of Section xx34 must also be used.
- c. All new tank systems must comply with Section xx35.

- xx31. Construction Criteria for New Underground Storage Tanks
  - a. Primary and secondary levels of containment shall be required for all new underground tanks used for the storage of hazardous substances as defined in Article 11.
  - b. All primary containers shall be product-tight.
  - c. All secondary containers shall be constructed of materials of sufficient thickness, density, and composition to contain the hazardous substance for a period of at least twice the maximum anticipated time sufficient to allow detection and recovery of leakage from the primary container.
  - d. The secondary container for one tank shall be large enough to contain at least 100 percent of the volume of the primary container.
  - e. In the case of a storage facility with multiple primary containers, the secondary container shall be large enough to contain 150 percent of the volume of the largest primary container placed in it, or 10 percent of the aggregate internal volume of all primary containers in the storage facility, whichever is greater.
  - f. If the storage facility is open to rainfall, then the secondary container must be able to accommodate the volume of the twenty-four (24) hour-one hundred (100) year storm in addition to that required in Subsections d and e of this section.
  - g. Volume requirements for a secondary container which consists of the pore space in backfill placed around the primary container shall be 110 percent

of that required in Sections xx31(d) through (f). The available pore space in the secondary container backfill shall be determined using the methods prescribed in ASTM standard \_\_\_\_\_\_.

- h. Laminated, coated, or clad materials shall be considered single walled and shall not be construed to fulfill the requirements of both primary and secondary containment.
- i. Double walled tanks which satisfy the requirements of Sections xx31(b) and
   (c) shall be considered to fulfill the volumetric requirements for secondary containment specified in Sections xx31(d).

- xx32. Monitoring Criteria for New Underground Storage Tanks
  - a. Secondary containers shall be equipped with a collection system capable of removing any precipitation, subsurface infiltration, or hazardous substance and liquid leakage from the primary containment.
  - b. The floor of the secondary containment shall be of rigid construction and sloped to a collection sump. The sump shall be of sufficient depth to allow efficient removal of the collected liquid and be extended to the ground surface by an access casing of not less than four (4) inches in diameter screened in the region of the sump, and covered with a locked waterproof cap.
  - c. The casing shall be of sufficient thickness to withstand all anticipated applied stresses plus a 1.5 safety factor and constructed of materials that will not be structurally weakened by the stored product nor donate, capture, or mask product constituents for which analyses will be made.
  - d. The sump shall be equipped with a removable leak detection sensor capable of detecting 0.5 inches of standing liquid and activating a strategically located above-ground alarm system when any combination of a hazardous substance or water is present.
  - e. Doubled walled tanks which have a detection monitoring system satisfying Section xx32(f) are exempt from the requirements of Sections xx32(b) through (d).
  - f. The interstitial space between the walls of a double-walled tank shall be monitored continuously using a pressure sensor. A fluid sensor capable

of detecting 0.5 inches of any combination of a hazardous substance or water may be used when ground water is above the top of the double-walled tank. The sensing devices shall be capable of activating a strategically located above-ground alarm system.

# xx33. Construction Criteria for New Motor Vehicle Fuel Tanks

- a. Primary containers for the underground storage of motor vehicle fuel shall consist of product-tight tanks constructed of fiberglass reinforced plastic, cathodically protected steel, or steel clad with glass fibre reinforced plastic and installed in conjunction with the secondary containment system described in Section xx33(i).
- b. Primary containers used for the underground storage of motor vehicle fuel and constructed of materials other than those specified in Section xx33(a) shall be subject to the requirements of Section xx31.
- c. The secondary container shall be demonstrated to achieve the integrity and compatibility criteria of Section xx31(c) of this Article.
- d. The leak interception and detection system (secondary container) and the response plan shall preclude the contact of any leaked hazardous substance with ground water. Proof that the secondary container and response plan will protect ground waters must be demonstrated by an evaluation which considers the following:
  - 1) The volume of the secondary container;
  - 2) The depth from the bottom of the secondary container to the highest anticipated level of ground water;
  - 3) The nature of the unsaturated soils under the secondary container their ability to adsorb contaminants or allow vertical movement of contaminants; and

- 4) The nature and timing of the response plan to clean-up the hazardous substances which have been discharged from the primary container.
- e. Pressurized piping systems that include an automatic, continuously operating pressure loss detector and flow restriction device are exempt from the secondary container requirements of the article. This detector shall be connected to a visual or audible alarm system.

- xx34. Monitoring Criteria for New Motor Vehicle Fuel Tanks
  - a. Monitoring of underground tanks used for the storage of motor vehicle fuel shall consist of all of the following:
    - Monitoring of the secondary containment system pursuant to subsections b, c and d of this section.
    - 2) Daily gauging and inventory reconciliation by the operator pursuant to subsections c through f of Section xx42 of Article 4.
    - Hydrostatic testing of the tank every two years according to the criteria specified in Section xxxx(xx), and
    - 4) All pressurized piping systems shall be monitored utilizing an on-line pressure loss detector and flow reduction device. The detector shall be connected to a visual or audible alarm system.
  - b. An access casing shall be installed at each monitoring location as described in Section xx35(b)(ll) of this Article. The casing shall be:
    - Capable of allowing any liquid that may be moving along the upper surface of the secondary container to enter the casing;
    - 2) Constructed to be not less than four (4) inches in diameter and of sufficient thickness to withstand all anticipated applied stresses plus a safety factor of 1.5 and of materials that will not be structurally weakened by the stored product nor donate, capture, or mask product constituents for which analyses will be made.

- 3) Screened along the entire vertical zone of permeable material which may be installed between the primary and secondary container;
- 4) Capable of precluding leakage of any hazardous substance to areas outside of the secondary container; and
- 5) Extended to the ground surface and covered with a locked waterproof cap.
- c. Monitoring of each casing described in Section xx34(b) shall utilize a method which is capable of detecting 0.50 inches of stored hazardous substance or water in the casing and differentiating between the hazardous substance and water.
- d. The frequency of monitoring shall be such that materials leaked from the primary container are detected and cleaned up before they reach ground water. The determination of monitoring frequency shall be based on an evaluation which considers factors 1 and 2 below. Factors 3 through 6 must also be evaluated if the volume of the secondary container is less than either: for a single primary tank in a secondary container -100 percent of the volume of the primary tank in a secondary container; or, for multiple primary tanks within a secondary container - the largest of 150 percent of the volume of largest primary container or 10 percent of the total of all primary containers.
  - Volume of the secondary container in relation to the volume of the primary container;

- 2) The amount of time the secondary container can be expected to provide containment in relation to the period of time between monitoring and for the clean-up of leaked materials to be completed;
- 3) The volume of the secondary container and its relationship to the expected volume of leakage between monitoring that will not be detected by other, more frequent monitoring methods;
- 4) The depth from the bottom of the secondary container to the highest anticipated level of ground water;
- 5) The nature of the unsaturated soils under the secondary container and their ability to adsorb contaminants or allow vertical movement of contaminants; and
- 6) The nature and timing of the response plan to clean-up the hazardous substances which have been discharged from the primary container.
- e. Underground tanks used for the storage of motor vehicle fuels that have a loss or gain of hazardous substance or water as determined by daily gauging and inventory control (as required in subsection a(2) of this section) of greater than any of the following shall immediately be taken out of service and within five working days be tested for tightness by methods specified in Section xxxx.
  - 1) Daily loss or gain of 50 gallons, or
  - 2) Seven (7) day loss or gain of five percent of the volume of hazardous substance delivered over the seven days, or

3) Cumulative (calculated over a period of at least thirty (30) days) loss or gain of one-half percent of the volume of hazardous substance delivered over the period that the cumulative loss or gain is calculated.

### xx35. General Construction Criteria

- a. The following sections apply to all primary and secondary containers.
- b. Primary containers and double-walled tanks shall be designed and constructed to comply with all of the following:
  - A permanent label shall be affixed at the fill port of each underground tank containing information on the tank manufacturer, date of manufacture, construction standards, and tank capacity.
  - 2) A 0.25 inch thick steel wear plate (striker plate) shall be centered under each opening of the underground tank. The plate shall be rolled to the contours of the tank, bonded or seam welded in place, and have a minimum area of 576 square inches. Underground tanks equipped with a guide for directing dip sticks to the striker plate may use a smaller striker plate upon approval by the local agency.
  - 3) All underground tanks shall be guaranteed by the manufacturer to be product tight prior to installation.
  - 4) Following installation, all underground tanks shall be tested either hydrostatically or with pressure in accordance with standards and procedures set forth in Article 4.
  - 5) Cathodically protected steel and steel clad with glass fibre reinforced plastic shall be fabricated and designed by the requirements in UL 58,

    Standards for Steel Underground Tanks for Flammable and Combustible

    Liquids or the American Society of Mechanical Engineers (ASME) Pressure

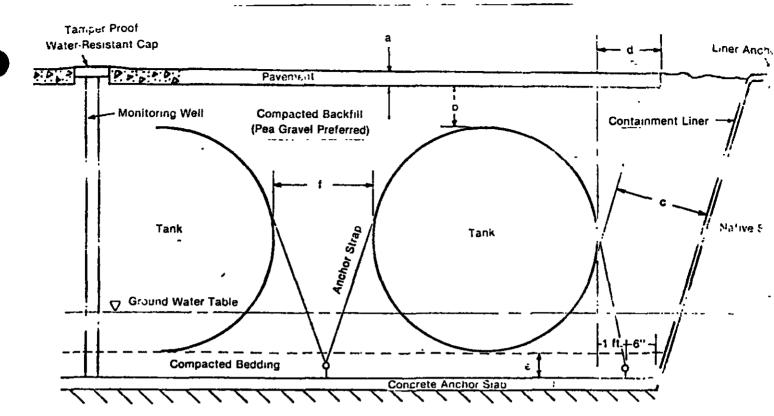
- Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code and have a minimum thickness of at least 7 gauge (0.18 inch).
- 6) Fiberglass reinforced plastic tanks shall be Underwriters Llimited (UL) listed and designed in accordance with UL Standard 1316, Standard for Glass-Fiber-Reinforced Plastic Underground Storage, or Underwriter's Laboratory of Canada, Standard ULC-5615-1977, Standard for Reinforced Plastic Underground Tanks for Petroleum Products.
- 7) Fiberglass reinforced plastic tanks shall be tested by the manufacturer for durability and chemical compatability with the hazardous substances to be stored using applicable sections of ASTM D4021-81 "Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Storage Tanks", and the manufacturer shall provide the owner with written assurance of the compatibility.
- 8) The secondary container must be capable of precluding the inflow of the highest seasonal ground water into the space between the primary and secondary containers.
- 9) If the space between the primary and secondary containers is backfilled, the backfill material shall not preclude the vertical movement of leakage from any part of the primary container.
- 10) The secondary container shall at a minimum encompass the area within the system of vertical planes surrounding the exterior of the primary containment unit. If backfill is placed between the primary and secondary containment then an evaluation shall be made of the maximum

lateral spread of a point leak from the primary containment over the vertical distance between the primary and secondary containment. The secondary containment shall extend beyond the vertical planes an additional distance defined above equal to the radius of lateral spread plus one foot.

- 11) The secondary container and any backfill material between the primary and secondary container shall be designed and constructed to promote gravity drainage of a leak of hazardous substances from any part of the primary container to the monitoring location(s).
- 12) The original excavation for the secondary container shall have a water tight cover which extends at least one (1) foot beyond each boundary of the original excavation. This cover shall be asphalt, reinforced concrete, or equivalent material which is sloped to drainways leading away from the excavation. Double-walled tanks are exempt from this requirement.
- c. All primary and secondary container systems shall be designed and constructed to comply with all of the following:
  - Underground storage tanks shall be located outside the prism of bearing pressure from footings of existing structures and a minimum of ten (10) feet away from these structures.
  - 2) The actual location and orientation of the underground tanks and appurtenant piping systems shall be indicated on as-built drawings

- of the facility. Copies of all drawings, photographs, and plans shall be maintained at the site for the life of the facility.
- 3) Materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the detioration of a primary or secondary container shall be separated in both the primary and secondary containment so as to avoid potential intermixing.
- 4) Drainage of precipitation from within a storage facility containing hazardous materials shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged.
- 5) The water shall be analyzed for the product(s) stored in the primary containment prior to initial removal and <u>monthly</u> thereafter for any continuous discharge (removal) to determine the appropriate method for final disposal.
- d. All primary containers and double-walled tanks shall be installed as follows:
  - 1) Underground storage tanks shall be installed in accordance with the minimum depth of cover and thickness of bedding provided in Figure 3.1, "Dimensions for Underground Tank Installation" and Table 3.1, "Recommended Dimensions for Underground Tank Installations". Atmospheric tanks of steel construction may be buried deeper, but in no case shall the burial depth be such that the static head on the bottom of the tank exceeds 10 psig with the fill pipe or vent pipes filled with liquid.

Figure 3.1. Dimensions for Underground Tank Installation



Key
a-pavement thickness
b-depth of compacted backfill cover
c-distance between tank and excavation
waii

d-pavement extension e-depth of bedding f-distance between adjacent tanks

# Table 3.1 Recommended Dimensions for Underground Tank Installations

TYPE OF TANK	MINIMUM REQUIREMENT*	TYPE OF TANK	MINIMUM *REQUIREMENT
All Tanks		Fiberglass Reinforced Plastic Tanks (20,000 Gallons and Under)	
Pavement Extensions(d)	12 inches	Maximum Burial Depth(b)	84 inches
Distance Between Adjacent Tanks(f) Distance Between Tank and Bank of	24 inches	Reinforced Concrete Pavement(a)	6 inches
Excavation(c)	24 inches	Plus Compacted Backfill Cover(b)	18 inches**
Thickness of Compacted Bedding(e)	12 inches	or	io niches
Thickness of Compacted bedding(e)	12 IIICHES	Asphaltic Concrete Pavement(a)	6 inches
Steel Tanks		Plus Compacted Backfill Cover(b)	30 inches**
With Traffic Loads		Without Traffic Loads	
Reinforced Concrete Pavement(a)	6 inches	Reinforced Concrete Pavement(a)	4 inches
Plus Compacted Backfill Cover(b)	18 inches	Plus Compacted Backfill Cover(b)	12 inches**
Asphaltic Concrete Pavement(a)	8 inches	Fiberglass Reinforced Plastic Tanks (Over 20,000 gallons)	
Plus Compacted Backfill Cover(b)	18 inches	Maximum Burial Depth(b)	84 inches
Without Traffic Loads		With Traffic Loads	
Reinforced Concrete Pavement(a)	4 inches	Reinforced Concrete Pavement(a)	6 inches
Prus Compacted Backfill Cover(b)	12 inches	Plus Compacted Backfill Cover(b) or	36 inches
		Asphaltic Concrete Pavement(a)	6 inches
		Plus Compacted Backfill Cover(b)	42 inches
*Un'ess Otherwise Noted		Without Traffic Loads	
**In Wet Hole Installations, the Minimum Depth of Compacted		Reinforced Concrete Pavement(a)	6 inches

- 'Plus Compacted Backfill Cover(b) . ....

24 inches

<sup>\*\*</sup>In Wet Hole Installations, the Minimum Depth of Compacted Cover is 36 Inches

- 2) For installations above the water table, the backfill in the secondary container shall be placed in successive twelve (12) inch lifts with hand placement and compaction to 95 percent standard procter for the bed, the first two lifts, and the last two lifts between the top of the tank and the cover slab. All other lifts shall be placed in successive twelve (12) inch lifts and tamped.
- 3) All underground tanks shall rest directly on a compacted bed or on foundations made of concrete, masonry, piling, or steel. The foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.
- 4) Tanks shall be so supported as to prevent the excessive concentration of loads on the supporting portion of the shell.
- 5) Fiberglass reinforced plastic tanks shall be installed using a bedding of either pea gravel or stone/gravel crushings which satisfy the following criteria (certified by the backfill supplier):
  - (a) For pea gravel, a clean and naturally rounded aggregatewith a mix of particle sizes with diameters not less than0.125 inches or more than 0.750 inches,
  - (b) For stone/gravel crushings, the material should be washed and free flowing, with angular particle sizes not less than 0.125 inches or more than 0.500 inches,

- (c) Meet the requirements of the American Society for Testing and Materials (ASTM) - 33 for quality and soundness, and
- (d) Have no particles passing a #8 sieve.
- 6) Other backfill materials may be substituted if: (a) the material required in Section xx35(d)(5) is not available, and (2) the tank manufacturer or a professional engineer designated by the local agency has approved the use of the substitute material and developed appropriate installation procedures.
- 7) Steel tanks shall be installed using the materials presented in Sections xx35(d)(5) or a uniform clear sand or self-compacting gravel which is free of rocks, clay, loam, or cinders.
- 8) All fittings and accessways which extend through pavement openings shall be raised at least two (2) inches above grade (the pavement surface) with the pavement sloped upward to the edge of this opening.
- 9) A minimum gap of three (3) inches shall be maintained between the underground tank and the bottom of any cavity used for associated tank functions.
- e. All primary containers and double-walled tanks shall be anchored as follows:
  - 1) Anchoring in strict accord with the manufacturer's specifications shall be required for all fiberglass reinforced plastic tanks with

- a diameter greater than or equal to twelve (12) feet. These specifications are in lieu of those in (2) through (6) below.
- 2) All underground storage tanks which are subject to flotation shall be weighted or anchored. The requirements for weighting and anchoring shall be based on an analysis of potential ground water levels at the site and calculations on the buoyancy of the underground tank(s), both of which shall be made by a registered professional engineer.
- 3) Anchoring of underground storage tanks shall be accomplished by strapping to a reinforced concrete anchor pad buried underneath twelve (12) inches or more of bedding material, or concrete deadmen layed along each side and parallel to the tank.
- with recognized engineering standards by a registered professional engineer and installed in accordance with manufacturer's recommendations. At a minimum the anchor slabs shall be eight (8) inches thick and extend eighteen (18) inches beyond the end of the tank and the vertical tangent line of the tank. Deadmen shall be a minimum twelve (12) inches by twelve (12) inches and extend twelve (12) inches beyond the ends and vertical tangent lines of the tank.
- 5) Anchor bolts shall be imbedded in the slab and coated with epoxy to prevent corrosion.
- 6) Anchor straps shall be uniformly tight and spaced to evenly distribute the load and aligned, where applicable, at locations designated by

the manufacturer for this purpose. On steel tanks, the strap shall be electrically isolated from the tank by neoprene, asphalt-impregnated expansion joint material, or equivalent.

- f. When required by the local agency, all underground storage tanks shall be equipped with an overflow protection system which includes the following elements:
  - 1) A level sensing device that continuously monitors and indicates the liquid level in the tank and either (2) or (3) or both,
  - 2) An audible or visual alarm system triggered by a liquid level sensor to alert the operator of an impending overfill condition, or
  - 3) An automatic shut-off device that stops the flow of product being delivered to the tank when the tank is full.

The overflow protection system required above shall be satisfied for underground storage tanks containing motor vehicle fuels in which both the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank.

- g. Corrosion protection as described below shall be installed for all primary tanks and double-walled tanks made of steel. Steel tanks clad with fiberglass complying with the specifications of subsection h of this section are exempt from this subsection.
  - 1) A corrosion protection system shall include the following measures of control:

- (a) Cathodic protection using sacrificial galvanic anodes or anodes energized by impressed currents,
- (b) A monitoring system to measure the effectiveness of the cathodic protection system,
- (c) A tough exterior epoxy coating, and
- (d) Electrical isolation of the tank from the piping system and other underground metallic structures.
- Active cathodic protection systems consisting of sacrificial galvanic anodes or energized by impressed currents shall be designed by a registered corrosion engineer and monitored at 90-day intervals.
- 3) An exterior epoxy coating shall be applied to the entire exterior surface of the tank after all bushings and plugs have been installed, and immediately after sand blasting in accordance with Steel Structure Painting Council Specification No. 6, Commercial Blast Cleaning.
- 4) The coating material shall be a coal tar epoxy applied to the tank shell to a thickness of 13 mils when wet (10 mils minimum when dry) and on the tank head and within 48 inches of shell-mounted anodes to a thickness of 22 mils when wet (15 mils minimum when dry). The fabricator shall use a wet film thickness gauge during application of the coating and a nondestructive magnetic film gauge tester to the dried coating to ensure proper application thickness.

- 5) All cathodically protected steel tanks shall be equipped with fittings for electrically insulating the tank from the piping. The fittings shall be nylon bushings, bolted flanges with companion nylon flanges, commercially available flange insulation kits, or an equivalent system. The insulating materials shall be able to withstand exposure to the material to be stored without swelling and/or degradation.
- h. Primary containers or double-walled tanks that are made of steel and clad with glass fiber-reinforced plastic shall comply with all of the following:
  - 1) The resin coating used for steel underground tanks clad with fiberglass shall satisfy the following:
    - (a) Have a minimum thickness of 100 mils bonded to the steel shell.
    - (b) Have bonding qualities and a coefficient of thermal expansion compatible with steel such that stress due to temperature changes will not be detrimental to the soundness of the coating and the permanent bond between the coating and the steel.
    - (c) Be of sufficient density and strength to form a hard impermeable shell which will not crack, wick, wear, soften, or separate over the life of the tank.
    - (d) Be noncorrosive in the anticipated underground soil environment and compatible with the product stored in the tank.

2) Steel tanks clad with glass fiber-reinforced plastic shall have nonconductive bushings, gaskets, or washers at all piping connections.

# Article 4. Existing Tank Monitoring Criteria

Adopt new section to read:

## xx40. Applicability

- a. All owners of existing underground storage tanks subject to this subchapter shall implement a monitoring system that is capable of detecting any release of hazardous substance stored in the tank. The failure to implement an approved monitoring system shall be cause for immediate closure of the tank pursuant to the regulations of Article 7 of this subchapter.
- b. The monitoring system for all existing underground tanks shall meet the standards described in Section xx41; however, existing underground tanks storing motor vehicle fuels may utilize a monitoring system meeting the standards of Section xx42 in lieu of Section xx41.

- xx41. Applicable Monitoring Methods and Results Evaluation Existing Underground Storage Tanks
  - a. A monitoring system for existing underground storage tanks shall include the following:
    - 1) Visual monitoring pursuant to subsection b where practical.
    - 2) Where visual monitoring pursuant to 1 above is not practical, then the following monitoring shall be implemented unless the criteria described in the applicable subsection allowing an exemption are met:
      - (a) tank testing pursuant to subsection c; and
      - (b) inventory control pursuant to subsection d; and
      - (c) soils monitoring pursuant to subsection e; and
      - (d) ground water monitoring pursuant to subsection f; or
      - (e) vadose zone monitoring pursuant to subsection g; or
      - (f) vapor monitoring pursuant to subsection h.
  - b. Underground tanks used for the storage of hazardous substances shall be tested for leaks.
    - 1) Methods used must be capable of detecting a hazardous substance loss of at least 0.05 gallons per hour (gph). These methods are limited to those tests that make adjustments for all of the following:

- (a) the presence of vapor pockets,
- (b) thermal expansion or contraction of the hazardous substance,
- (c) temperature stratification in the tank,
- (d) evaporation,
- (e) pressure variations in the tank, and
- (f) the deflection of the tank ends.
- 2) Underground tanks used for the storage of hazardous substances shall be tested according to the schedule presented in Table 4-1.
- 3) Within thirty days of completion of the leak detection test, the underground tank owner shall provide the local agency with a report presenting the following information:
  - (a) The procedures used (including any deviations from those recommended by the manufacturer) for the leak detection method,
  - (b) the test results used in determining the volumetric rate of product loss, and
  - (c) the volumetric rate of product loss.

The information shall be presented in written and/or tabular format as appropriate, and shall be at a level of detail appropriate for the test procedure used.

# Table 4.1 Tank Testing Schedule for Hazardous Substance Storage Tanks

- Category A: Un-clad steel tanks without corrosion protection test 10 years after installation, and yearly thereafter.
- Category B: Corrosion resistant tanks<sup>1</sup> test 15 years after installation, and yearly thereafter.
- Category C: Tanks installed with the secondary container and monitoring systems specified in Article 3 and monitored accordingly require no testing.

Common corrosion resistant tanks include: fiberglass reinforced plastic (FRP), cathodically protected steel, FRP-clad steel tanks, and double-walled tanks.

- 4) Underground tanks which are found to lose product at a rate greater than or equal to 0.05 gph shall be repaired or replaced as specified in Articles 6 and 7, respectively.
- 5) The results of any tests performed on the tank at any other interval to determine if the tank is leaking shall be reported by the tank owner to the local agency within thirty days of completion as specified in 3 above.

- xx42. Applicable Methods and Results Evaluation Motor Vehicle Fuel Tanks
  - a. A monitoring system for existing motor vehicle fuel tanks shall include the monitoring specified in subsection (b) of this section and subsection b of Section xx4l of this Article.
  - b. All pressurized piping systems shall be monitored utilizing an on-line pressure loss detector and flow reduction device. The detector shall be connected to a visual or audible alarm system.
  - c. All tanks shall be individually monitored utilizing a daily inventory control system that takes into account: daily tank quantity measurements for both tank contents and any water layer; daily retail meter delivery records for outgoing product; and, daily wholesale meter delivery records for incoming product. Meters shall be approved for use by the County Department of Weights and Measures.
  - d. Tank quantity measurements shall be based on liquid elevation measurements which are:
    - 1) Capable of measuring to one-eighth of an inch;
    - Performed during periods of no tank additions or withdrawals;
    - 3) Performed by the tank owner, operator or other managerial personnel who have had appropriate training;
    - 4) Based on the average of two readings if stick measurements are used;
    - 5) Capable of detecting a water layer at the lowest end of the tank;

- 6) Measured at the center of the longitudinal axis of the tank if access is available or measured at the lowest end of the tank with measurements at both ends on a semi-annual basis to determine if any tank tilt exists and, if so, its magnitude; and
- 7) Converted to volume measurements based on a calibration chart provided by the tank manufacturer or supplier that takes into account the actual tilt of the tank as determined initially and semi-annually as described in 6 above.
- e. Wholesale meter delivery records shall be verified according to the following procedure which utilizes the criteria described in d above:
  - Prior to any delivery, the volume of actual tank contents shall be determined and, if product is to be removed from the tank during delivery, the retail meter totalizer reading(s) shall be recorded.
  - 2) Following a delivery, the volume of the actual tank contents shall be determined and, if product was removed from the tank during the delivery, the retail meter totalizer reading(s) shall be recorded.
  - 3) Based on the above readings, a determination shall be made of the increase or decrease in the volume of water in the tank and the increase in the volume of product in the tank. This figure shall be compared with the metered volume of the product delivery.

- 4) A difference of more than the lessor of xx percent of the delivery volume or xx gallons, shall be cause for a reevaluation of the measurements. This reevaluation shall initially include collection of the information required in 2 above. If this reevaluation results in a difference of more than the figures described above, the delivery meter shall be recalibrated.
- f. Underground tanks used for storage of motor vehicle fuels that have a loss or gain of product or water as determined by daily gauging and inventory control of greater than any of the following shall immediately be taken out of service and within five working days be tested for tightness by methods specified in Subsection b of Section xx4l of this Article.
  - 1) Daily loss or gain of 50 gallons, or
  - 2) Seven (7) day loss or gain of five percent of the volume of motor vehicle fuel delivered over the seven days, or
  - 3) Cumulative (calculated over a period of at least thirty (30) days) loss or gain of one-half percent of the volume of motor vehicle fuel delivered over the period that the cumulative loss or gain is calculated.

### Article 11. Definition of Terms

Adopt new section to read:

## xx10. Definitions

The following definitions shall apply to terms used in this subchapter.

"Board" means the State Water Resources Control Board.

"Existing underground tank" means any underground tank that is not a new underground tank.

"Facility" means any one, or combination of, underground storage tanks used by a single business entity at a single location or site.

"Hazardous substance" means all of the following liquid and solid substances:

- Substances on the list prepared by the Director of the Department of Industrial Relations pursuant to Section 6382 of the Labor Code.
- 2. Hazardous substances as defined in Section 25316.
- 3. Any substance or material which is classified by the National Fire Protection Association (NFPA) as a flammable liquid, a class II combustible liquid, or a class III-A combustible liquid.

"Installed" means the point in time when all necessary permits have been issued allowing the implacement of the underground tank or, if no permits are necessary, the point in time when actual implacement of the tank begins.

"Local agency" means the county or city that is implementing the permit program. The local agency may also mean the department within the county or city designated to implement the program.

"New underground tank" means any underground tank installed after the effective date of these regulations or, if prior to adoption of these regulations, installed within a county, city and county or city where the county, city and county or city has adopted an ordinance implementing the provisions of Section 25284 of the Health and Safety Code and the tank was installed after the date of adoption of said ordinance.

"Operator" means the operator of an underground storage tank.

"Owner" means the owner of an underground storage tank.

"Person" means an individual, trust, firm, joint stock company, corporation, including a government corporation, partnership, and association.

"Person" also includes any city, county, district, the state, or any department or agency thereof. "Person" includes the United States, to the extent authorized by federal law.

"Pipe" means any pipeline or system of pipelines which is used in connection with the hazardous substances and which are not intended to transport hazardous substances in interstate or intrastate commerce or to transfer hazardous materials in bulk to or from a marine vessel. "Primary containment" means the first level of containment, such as the portion of a tank which comes into immediate contact on its inner surface with the hazardous substance being contained.

"Product-tight" means impervious to the substance which is contained, or is to be contained, so as to prevent the seepage of the substance from the primary containment. To be product-tight, the tank shall not be subject to physical or chemical deterioration by the substance which it contains over the useful life of the tank.

"Secondary containment" means the level of containment external to, and separate from, the primary containment.

"Single-walled" means construction with walls made of only one thickness of material. For the purpose of this subchapter, laminated, coated, or clad materials shall be considered single-walled.

"Special inspectors" means a professional engineer, registered pursuant to Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code, who is qualified to attest, at a minimum, to structural soundness, seismic safety, the compatibility of construction materials with contents, cathodic protection, and the mechanical compatibility of the structural elements.

"Storage" or "store" means the containment, handling or treatment of hazardous substances, either on a temporary basis or for a period of years. "Substantially beneath the surface of the ground" means that at least 50 percent of the surface area of the tank that can be in contact with the stored material is below the ground surface.

"Tank" means any single container including connecting piping which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground.

"Tank system" means any one or more tanks and is used synonymously with "underground storage tank".

"Unauthorized release" means any release or emission of any hazardous substance unless this release is authorized by the State Water Resources Control Board pursuant to Division 7 (commencing with Section 13000) of the Water Code. "Unauthorized release" does not include withdrawals of hazardous substances for the purpose of legitimate sale or use.

"Underground storage tank" means any one or combination of tanks, including pipes connected thereto, which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground.

2. Draft regulations dated June 1, 1984

			$\wedge$	
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			California Administrative Code	
			Title 23 Waters	
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#### Article 1. General

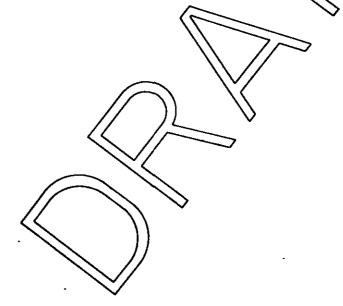
Adopt new section to read:

2610. Applicability

- (a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous substances from underground tanks.

  These regulations define new and existing tanks; provide a list of regulated substances; establish construction, monitoring, release reporting, repair and closure standards; and specify variance request procedures.
- (b) Persons who own one or more underground tank(s) storing hazardous substances shall comply with these regulations except as provided in Section 2611 of this Article. If the speciator of the tank(s) is not the owner then the owner shall enter into a written contrast with the operator requiring the operator as required by the permit to: monitor the tank; maintain appropriate records; implement reporting procedures as required by the permit; and properly close the tank.
- (c) Counties small implement the regulations in this subchapter within both the incorporated and unincorporated areas of the County without modification except as provided to Section 2611(g) of this Article or Article 8 of this subchapter, through the issuance of permits to underground tank owners. A permit may be issued for each underground tank, several tanks or for a facility. A city may, by ordinance, assume the responsibility for implementing within its boundaries the provisions of this subchapter.
- (d) All owners of underground tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 or Article 4

of this subchapter depending on whether the tank is new or existing, respectively. However, owners of existing underground tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued permits pursuant to these standards in lieu of the standards of Article 4 of this subchapter. In addition, all owners and/or operators of underground tanks subject to these regulations must comply with the release reporting requirements of Article 5 of this subchapter, the closure requirements of Article 7 of this subchapter, and the permit application requirements of Article 10 of this subchapter.



#### Adopt new section to read:

#### 2611. Exemptions

The following activities shall be exempt from the provisions of this subchapter:

- (a) Underground storage tanks that are located within the jurisdistions of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, makes the requirements of Auticle 3 and Article 4 of this subchapter or equivalent standards to implement Health and Safety Code Sections 25284 and 25284.1 provided that:
  - (1) The ordinance, as it may be amended, combines to meet at a minimum the requirements of Article 3 and Article 4 of this subchapter or equivalent standards to implement Health and Safety Code Sections 25284 and 25284.1; and
  - (2) The county or city issues commits for underground tanks pursuant to the ordinance.
- b) Underground storage tanks that are used for the storage of hazardous substances used for the control of external parasites of cattle and subject to the supervision of the county agricultural commissioner if the county agricultural commissioner determines, by inspection prior to use, that the tank provides a level of protection equivalent to that required by Section 25284 of the Health and Safety Code, if the tank was installed after Sune 30, 1984, or protection equivalent to that provided by Section 25284.1 of the Health and Safety Code if the tank was installed on or before June 30, 1984.

- (c) Underground storage tanks that are located on a farm and only store motor vehicle fuel which is used only to propel vehicles used primarily for agricultural purposes. Vehicles used primarily for agricultural purposes is meant to include non-licensed vehicles and vehicles utilized in the production of agriculture at the farm site.
- (d) Underground storage tanks that are used for aviation or motos vehicle fuel storage and are located within one mile of a farm and the tank is used by a licensed pest control operator, as defined in Section 11705 of the Pood and Agricultural Code, who is primarily involved in agricultural pest control activities.
- separation sumps, lined and unished pits, sumps and lagoons. (Sumps which are a part of a monitoring system required under Article 3 or Article 4 of this subchapter are not exampted by this section; however, these sumps would be considered part of the secondary containment or leak detection system of the primary containment and would be required to meet the appropriate construction criteria.)
- (f) interpound storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the tank has been lessed a hazardous waste facilities permit by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or granted interim status under Section 25200.5 of the Health and Safety Code.

- (g) Counties or cities which had, prior to January 1, 1984, adopted an ordinance which, at a minimum, meets the requirements of Article 3 and Article 4 of this subchapter or equivalent standards to implement Health and Safety Code Sections 25284 and 25284.1 are exempt from all sections of this subchapter except subsections (a) and (b) of section 2701 and subsection (b) of section 2702 of Article 10 provided that:
  - (1) The Ordinance, as it may be amended, continues to meet at a minimum the requirements of Article 3 and Article 1 of this subchapter or equivalent standards to implement Health and Sarety Code Sections 25284 and 25284.1; and
  - (2) The county or city issues permits for underground tanks pursuant to the ordinance; and
  - (3) The county or city submit a written report of any unauthorized release from an underground storage tank to the Office of Emergency Services within 10 working days from the time the local agency is notified of the unauthorized release.

Article 2. Definition of Terms

Adopt new section to read:

2620, Definitions

The following definitions shall apply to terms used in this subchapter.

"Board" means the State Water Resources Control Board.

"Existing underground tank" means any underground tank that is not a new underground tank.

"Facilit," means any one, or combination of underground storage tanks used by a single business entity at a single location or site.

"Hazardous substance" means all of the following liquid and solid substances, unless the legariment of leasth Services, in consultation with the Board, determines the substance could not adversely affect the quality of the waters of the Spate:

- 1. Substances on the list prepared by the Director of the Department of Industrial Welations pursuant to Section 6382 of the Labor Code.
- Nazardous substances as defined in Section 25316 of the dealth and Safety Code.
- 3. Any substance or material which is classified by the National Fire Protection Association (NFPA) as a flammable liquid, a class III combustible liquid, or a class III-A combustible liquid.

"Installed" means the point in time when all necessary permits have been issued allowing the implacement of the underground tank or, if no permits are necessary, the point in time when actual implacement of the tank begins.

"Local agency" means the county or city that is implementing the permit program. The local agency may also mean the department within the county or city designated to implement the program.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn upon a propelled, excepting a device moved exclusively by human power or used exclusively upon stationary rails or tracks.

"Motor vehicle fuel tank" means a tank that contains a product which is intended to be used primarily to fuel motor vehicles.

"New underground tank" means any underground tank installed after
the effective date of these regulations or, if prior to adoption of
these regulations, installed within a county, city and county or city
where the county, city and county or city has adopted an ordinance
implementing the provisions of Section 25284 of the Health and Safety
Code and the tank was installed after the date of adoption of said
ordinance.

"Operator" means the operator of an underground storage tank.

"Owner" means the owner of an underground storage tank.

"Person" means an individual, trust, firm, joint stock company, corporation, including a government corporation, partnership, and association.

"Person" also includes any city, county, district, the state, or any department or agency thereof. "Person" includes the United States, to the extent authorized by federal law.

"Pipe" means any pipeline or system of pipelines which is used in connection with the hazardous substances and which are not introded to transport hazardous substances in interestate or intrastate commerce or to transfer hazardous materials in bulk to or from a marine vessel.

"Primary containment" means the birst level of containment, such as the portion of a tank which comes into immediate contact on its inner surface with the hazardous substance being contained.

"Product-tight" means impervious to the substance which is contained, or is to be contained, to as to prevent the seepage of the substance from the primary containment. To be product-tight, the tank shall not be subject to physical or chemical deterioration by the substance which yt cultains over the useful life of the tank.

"Secondary confarment means the level of containment external to, and waste from the provide a toloment.

of material. For the purpose of this subchapter, caminates, water, or clad materials shall be considered single-walled.

to Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code, who is qualified to attest, at a minimum, to

structural soundness, seismic safety, the compatibility of construction materials with contents, cathodic protection, and the mechanical compatibility of the structural elements.

"Storage" or "store" means the containment, handling or treatment of hazardous substances, either on a temporary basis of for a period of years.

"Substantially beneath the surface of the ground" means that at least 50 percent of the surface area of the tank that can be in contact with the stored material is below the ground surface.

"Tank" means any single container including connecting piping which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground.

"Tank system" means any one or more tanks and is used synonymously with "underground storage tank".

"Unauthorized release" means any release or mission of any hazardous substance unless this release is authorized by the State Water Resources Control Board pursuant to Doughon? (Cornells ing with Section 13000) of the Water Code. "Unauthorized release" does not confuse withdrawals of Hazardous substances for the purpose of impitmate sale or use.

"inderground storage tank means any one or combination of tanks, including pipes commenced thereto, which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground.

Article 3. New Tank Construction and Monitoring Standards

#### 2630. Applicability

- (a) This article contains statewide minimum standards for the construction, installation, and monitoring of new underground tanks that contain hazardous substances.
- (b) Sections 2631 and 2632 specify construction and monitoring standards for all new tank systems. New tank systems that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections 2633 and 2634 in lieu of those specified in Sections 2631 and 2632, respectively. However, if the construction standards in Section 2633 are used, then the manitoring standards of Section 2634 must also be used.
- (c) All her tank systems must comple with Section 2635.

- 2631. Construction Standards for New Underground Storage Tanks
  - (a) Primary and secondary levels of containment shall be required for all new underground tanks used for the storage of hazardous substances as defined in Article 11.
  - (b) All primary containers shall be product-tight,
  - (c) All secondary containers shall be constructed of materials of sufficient thickness, density, and composition to contain the nazardous substance for a period of at least twice the maximum anticipated time sufficient to allow detection and recovery of leakage from the primary container.
  - (d) The secondary container shall have the ability to contain the following volumes:
    - (1) at least 100 percent of the volume of the primary container where only one primary container is within the secondary container.
    - (2) In the case of multiple primary containers within a single secondary container, the secondary container shall be large enough to contain 150 percent of the volume of the largest primary container placed in it, or 10 percent of the aggregate internal volume of all primary containers in the storage facility, whichever is greater.

- (e) If the storage facility is open to rainfall, then the secondary container must be able to accommodate the volume of the twenty-four (24) hour-one hundred (100) year storm in addition to that raighted in Subsections (d) and (e) of this section.
  - (f) Volume requirements for a secondary container which consists of the pore space in backfill placed around the primary container shall be 110 percent of that required in Sections 2621(d) and (e). The available pore space in the secondary container backfill shall be determined using appropriate engineering methods.
  - (g) Laminated, coated, or clad materials shall be considered single walled and shall not be construed to fulfill the requirements of both primary and secondary containment.
  - (h) Double waited cames which satisfy the requirements of Sections 2631(b) and (c) shall be considered to furthal the volumetric requirements for sectionary containment specified in Sections 2631(d).

- 2632, Monitoring Standards for New Underground Storage Tanks
  - (a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this article.
  - (b) Secondary containers shall be equipped with a collection system capable of removing any precipitation, subsurface inflittation, or hazardous substance and liquid leakage from the primary containment.
  - (c) The floor of the secondary containment shall be constructed on a firm base and sloped to a collection sump. The sump shall be of sufficient depth and the access casing shall be of sufficient size to allow efficient removal of the collected liquid. The access casing shall be extended to the ground surface, screened in the region of the sump, and covered with a locked waterproof cap.
  - (c) The casing shall be of sufficient thickness to withstand dil anticipated applical stresses with a 1.5 safety factor and constructed of materials that will not be structurally weakened by the stored product nor denate, calture, up mask product constituents for which analyses will be made.
  - a semi-cannual basis for calibration and maintenance if needed. The continuous sensor shall be capable of either:

- (1) Detecting within the sump 0.5 inches of standard liquid and activating a strategically-located, above-ground alarm system when any combination of a hazardous substance or water is present. All standing liquid shall be immediately sampled and analyzed within normal analysis times to best detection limits to determine the presence of hazardous substances. This system cannot be used when water is normally expected to be present within the secondary containment; or
- (2) Detecting within the sump 0.3 inches of the hazardows substance stored in the primary container(s) and activating a strategically-located, above-ground alarm system.
- (f) The interstitial space between the walls of a double-walled tank may be monitored continuously using a pressure sensor. The sensing devices shall be capable of activating a strategically located above-ground alarm system. Double-walled tanks which utilize this leak detection system are exempt from the requirements of Sections 2632(c) through (e).

- 2633. Construction Standards for New Motor Vehicle Puel Tanks
  - (a) This section specifies alternate construction standards for new tanks which only contain motor vehicle fuels. This section may be utilized by permit applicants in lieu of Section 2631. If this section is used in lieu of Section 2631, then the monitoring standards specified in Section 2634 shall be used in lieu of those specified in Section 2632.
  - (b) Primary containers for the underground storage of moter vehicle fuel shall consist of product-tight tanks constructed of fiberglass reinforced plastic, cathodically protected steel, or steel clad with class fibre reinforced plastic and installed in conjunction with the secondary containment system described in Section 2633(d) and (e).
  - (c) Primary containers used for the underground storage of motor vehicle fuel and constructed of materials other than those specified in Section 2633(p) shall be subject to the requirements of Section 2631.
  - (d) The secondary container shall be demonstrated to achieve the integrity and compatibility critery of Section 263.(c) of this article.
  - (e) The leak interception and detection system (secondary container) and the response plan shall preclude the contact of any leaked hazardous substance with ground water. Proof that the secondary container and response plan will protect ground waters must be demonstrated by the permit applicant to the satisfaction of the local agency. The demonstration shall consider the religious.
    - (1) The volume of the secondary container;

- (2) The depth from the bottom of the secondary container to the highest anticipated level of ground water:
- (3) The nature of the unsaturated soils under the secondary container and their ability to adsorb contamenants or allow verticel movement of contaminants; and
- (4) The nature and timing of the response plan to clean-up the hazardous substances which have been discharged from the primary container.
- operating pressure loss detector and flow restriction device are exempt from the secondary container requirements of the article. This detector shall be connected to a visual or audible alarm system unless it provides at least a 50 percent reduction from normal flow rates.

- 2634. Monitoring Standards for New Motor Vehicle Fuel Tanks
  - (a) Monitoring of underground tanks used for the storage of motor vehicle fuel and constructed pursuant to the standards of Section 2633 of this article shall consist of all of the following:
    - (1) Monitoring of the secondary containment system pursuant to subsections (b), (c) and (d) of this section.
    - (2) Daily gauging and inventory reconciliation by the operator pursuant to Section 2643 of Article 4.
    - (3) Hydrostatic testing of the tarm every two years according to the criteria specified in Section 2642 of Article 4, and
    - (4) All pressurized piping systems shall be monitored utilizing an invitine pressure 1955 between and flow reduction decise. The detector shall be connected to a visual or audiolo alarm system unless it provides for at least a 50 percent reduction from worms: flow rates.
  - (b) An access dading shall be installed at each monitoring location as described in Section 2635(b)(11) of this article. The casing shall be:
    - capable of allowing any liquid that may be moving along the upper surface of the secondary container to enter the casing;

· . :

- (2) Of sufficient size and thickness to allow efficient removal of collected liquid and to withstand all anticipates applied stresses with a safety factor of 1.5;
- (3) Constructed of materials that will not be struct.rally weakened by the stored product nor donate, capture, or mask product constituents for which analyses will be made;
- (4) Screened along the entire vertical zone of permeable material which may be installed between the primary and secondary container;
- (5) Capable of precluding leakage of any hazardous substance to areas outside of the accordary continues and
- (6) Extended to the glaceman surface and covered with a locked water-

a centinuous sensor which is removable on a semi-annual pasis for calipration and maintenance, if needed, and capable of either:

- (1) Detecting within the casing 0.5 inches of standing liquid and activating a strategically-located, above-ground alarm system when any combination of a hazardous substance or water is present. All standing liquid shall be immediately sampled and analyzed within normal analysis times to best detection limits to determine the presence of hazardous substances. This yetem cannot be used when water is normally expected to be present within the casing; in
- (2) Detecting within the casing 0.50 inches of the hazardous substance stored in the primary container(s) and activating a strategicallylocated, above-ground alarge system.
- (d) The frequency of monitoring shall be such that materials leaked from the primary container are detected and present up before they reach ground water. The determination of monitoring frequency shall be based on an evaluation which considers factors 1 and 2 below. Factors 3 through 6 must also be evaluated if the volume of the secondary container is less than either: for a single primary tank in a secondary container 100 percent of the volume of the primary tank in a secondary container; or for multiple primary tanks within a secondary container the largest of 150 percent of the volume of largest primary container or 10 percent of the volume of largest primary container or 10 percent.
  - Volume of the secondary container in relation to the volume of the primary container;

- (2) The amount of time the secondary container can be expected to provide containment in relation to the period of time between monitoring and for the clean-up of leaded materials to be completed;
- (3) The volume of the secondary container and its relationers to the expected volume of leakage between monitoring that will not be detected by other, more engineer monitoring methods;
- (4) The depth from the bottom of the secondary container to the highest anticipated level of ground water.
- (5) The nature of the unsaturated soils under the secondary container and their ability to adsorb contaminants or allow vertical movement of contaminants; and
- (b) The needed of timing of the response plan to element the naversidas that the sum time in the property of the control of th

The topological and used for the appeals of monor validationals once we a benefit painty transfers to become or water as determined to daily daughts one intercept control (as required in some tion (2)) of this section to the procedures specified in subsection (f) of this section:

- (1) Daily loss or gain of 50 gallons, or
- (2) Seven [7] day loss or gain of five percent of the volume of hazardous substance delivered over the seven days, or
- (3) Cumulative (calculated over a period of at least thirty (30) days)
  loss or gain of one-half percent of the volume of hazardous substance
  delivered over the period that the cumulative loss or gain is
  calculated.
- (f) If inventory controls indicate a gain or loss of hazardous substances greater than that specified in subsection (e) of this section, then the following steps shall be implemented by the operator or permittee. The steps may be implemented sequentially or concurrently; however, they must be completed within the specified time periods. Reporting as required in article 5 of this subchapter shall be followed.

If ampletion of the super-bescribed in subsections (2), (3), or (3) of this subsection fraction intentory reconsilitation errors that, when corrected cases the levels in subsection (e) of this section not to be exceeded, then the remainder of the steps need not be completed. If completion of the steps described in subsections (4) or (6) through (8) of this subsection reveal the source of the loss or gain, then the remainder of the steps need not be completed.

Transfer of hazardous substances into and out of the underground storage tank may continue throughout the steps provided that the steps are completed within the specified time periods and any loss or gain does not exceed two times the levels specified in subsection (g) of this section. Inventory control and daily recondilization shall continue throughout implementation of the steps.

- (1) The operator shall notify the owner verbally or in writing of the fact that inventory controls indicate a gain or loss of hazardous substances or water within 24 hours of the description of the daily reconciliation which Redicates the loss or gain.
- (2) The operator shall review the inventory records within two (2) hours to determine if an arror exists which would cause the gain or loss than that specified in subsection (g. of this section.

The operator Shall have performed by a qualified person a complete region of all inventory records from the last time a zero loss or gain condition existed. This shall be completed within 24 hours of the conclusion of subsection (2).

(4) The readily accessible physical facilities shall be carefully

inspected for leakage. This shall be completed by trained personnel

within 24 hours of completion of subsection (3).

- (5) All dispenser meters associated with hazardous substance withdrawal shall be checked for calibration within 24 hours of completion of subsection (4).
- (6) All piping shall be tested using the methods specified in Sections
  4-3.6 or 4-3.7 of the National Fire Protection Association (NFPA)
  publication entitled "Underground Leakage of Flagmable and Combustible
  Liquids", 1983 (NFPA 329), within 24-hours of completion of subsection (5). This step may be completed after the step described in
  subsection (7) if excavation is necessary to perform the tests and
  if the step described in subsection (7) is completed within 48 hours
  of the completion of subsection (5). If this occurs, then this
  subsection shall be completed within 26 hours of the completion of
  subsection (7).
- (7) The tank shell be tested using the tests described in Section 2642 of Article 4 within 48 hours of completion of subsection (6).
- (8) Additional tesas or investigations as required by the local agency.

#### 2635. General Construction Standards

- (a) The following sections apply to all primary and secondary containers.
- (b) Primary containers and double-walled tanks shall be designed and constructed to comply with all of the following:
  - (1) A 0.25-inch thick steel was plate (striker plate) shall be centered under all accessible commings of the underground tank. The plate shall be rolled to the contours of the tank, honded or seam welded in place, and have a minimum area of the opening or a guide tube, whichever is smaller.
  - (2) All underground tanks shall be guaranteed by the manufacturer to be product tight prior to leaving the factory.
  - (3) Following installation, all underground tanks shall be tested either studiostatically on with pressure in accordance with standards and procedures set forthing Article 4.
    - Capture Cally protected steel tanks and steel tanks clad with those fibre reinforced plastic shall be fabricated and designed by the region ments in Underwriters Limited (UL) 38. Standards for Steel Underground Tanks for Flammable and Combustible Liquids or American Society of Mechanical Engineers (ASME) Pressure Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code and Dave a minimum thickenss of at least 7 gauge (0.18 inch).

- (5) Fiberglass reinforced plastic tanks shall be UL listed and designed
  in accordance with UL Standard 1316, Standard for Glass-Fiber-Reinforced
  Plastic Underground Storage or Underwriter's Laboratory of Canada,
  Standard ULC-5615-1977, Standard for Reinforced Plastic Underground
  Tanks for Petroleum Products.
- (6) Fiberglass reinforced plastic tanks shall be designed based on tests by the manufacturer for durability and chamical compatability with the hazardous substances to be stored using applicable sections of ASTM D4021-81 "Standard Specifications for Glass-Fiber-Reinforced Polyester Undesground Storage Tanks", and the manufacturer shall provide the owner with written assurance of the compatibility.
- (7) The secondary container must be capable of precluding the inflow of the highest ground water anticipated during the life of the underground storage tank into the space between the primary and secondary containers.
- (8) If the space between the primary and secondary containers is backfilled, the back-fill material shall not preclude the vertical
  reversely of teak-position any part of the primary container.
- the secondary container shall at a minimum encompass the area within the system of vertical planes surrounding the exterior of the primary containment and. If backfill is placed between the primary and secondary containment then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment.

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over the vertical distance between the primary and secondary containment. The secondary containment shall extend beyond the vertical planes an additional distance defined above equal to the radius of lateral spread plus one foot.

- (10) The secondary container and any backfill mater.al between the primary and secondary container shall be designed and constructed to promote gravity drawage of a leak of hazaroous substances from any part of the primary container to the monitoring location(s).
- water tight cover which extends at least one (1) foot beyond each boundary of the original excavation. This cover shall be asphalt, rainforced concrete or equivalent material which is sloped to drainess leading about from the excavation. Marways shall be constructed as water-bight as practical. Double-walled tanks are exampt from this requirement.
- c) All primary and secondary container systems shall be designed and constructed to comply with all of the following:
  - (1) Underground storage tanks shall be located outside the prism of bearing pressure from footings of existing or designed structures and a
    minimum of ten (10) feet away from these structures. Underground
    storage tanks may be located closer than ten (10) feet away from

- these structures provided a registered civil engineer reviews and approves of the design.
- (2) The actual location and orientation of the underground tanks and appurtenant piping systems shall be indicated on as-built drawings, of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local agency.
- (3) Materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of a primary or secondary container shall be separated in both the primary and secondary containment so as to avoid potential intermixing.
- (4) Drainage of liquid from within accordary container shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged. The liquid shall be analyzed to determine the presence of any of the hazardous substance(s) stored in the primary container prior to initial removal and monthly thereafter for any continuous discharge (removal) to determine the appropriate method for right disposal. The liquid shall be sampled and analyzed impediately upon an indication of an unauthorized release from the primary container.
- (d) All primary containers and double-walled tanks shall be installed according to the minufacturer's written recommendations or, if no written recommendations exist, best engineering practice.

- (e) All primary containers and double-walled tanks subject to floatation shall be weighted or anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.
- (f) When required by the local agency all underground storage tanks shall be equipped with an overflow protection system which includes the following elements:
  - (1) A level sensing device that continuously monitors and indicates the liquid level in the tank and extract (2) or (3) or both,
  - (2) An audible of visual alarm system triggered by a liquid level sensor to alert the operator of an impending overful condition, or
  - (3) In automatic shut-off device that stops the tlow of product being delivered to the tank when the tank is full.
- (g) The overflow protection system required in subsection f) of this section shall be satisfied for underground storage tasks containing miles vehicle fuels by which:
  - (1) Hoth the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank, or

- (2) The available capacity of the tank to be filled is determined immediately prior to filling to be at least 110 percent of the volume of the entire tank compartment to be delivered as determined by tank gauging, or
- (3) The hazardous substance being delivered can be metered into the tank and the available tank capacity is determined immediately prior to filling.
- (h) · All primary containers and double-walled tanks constructed of steel shall be protected by either:
  - (1) A properly installed, maintailed, and monitored cathodic protection system with or without coatings, or
  - (2) Corrosion resistant materials of construction such as special alloys or fiberglass-reinforced plastic Gatings as specified in Subsection (1) of this Section.
  - Selection of the type of protection to be employed shall be based on the commonston history of the area and the judgment of a registered corrosion engineer.
- Primary containers of double-walled tanks that are made of steel and clad with glass fiber-reinforced plastic shall comply with all of the following:

- (1) The resin coating used for steel underground tanks clad with fiberglass shall satisfy the following:
  - (A) Have a minimum thickness of 100 mils bonded to the steel thell
  - (B) Have bonding qualities and a coefficient of thermal expansion compatible with steel such that stress due to temperature changes will not be detrimental to the soundness of the coating and the permanent bond between the coating and the steel.
  - (C) Be of sufficient density and strength to form a hard impermeable shell which will not chack, wick, wear, soften, or separate over the life of the tank
  - (D) Be noncorrosive in the anticipated underground soil environment and compatible with the product stored in the tank.
- (2) Steel tanks class with glass fiber-reinforced plastic shall have presented tive bushings, gaskets, or washers at all piping connections.

Article 4. Existing Underground Storage Tank Applitoring Criteria

Adopt new section to read:

#### 2640. Applicability

- (a) All owners of existing underground storage tanks subject to this subchapter shall implement a monitoring system that complies with this
  article and is approved by the local agency. A local agency shall not
  issue a permit if the underground storage tank cannot be adequately
  monitored. The failure to implement an approved monitoring system
  shall be cause for closure of the underground storage tank pursuant to
  Article 7 of this sunchapter.
- The intent of monitoring existing underground storage tanks is to detect leakage before the barardous substance reaches ground water. Therefore primary leak detection monitoring shall, in most cases, builties systems other than ground water monitoring. Most primary tank monitoring methods individually cannot provide a degree of leak detection equivalent to that provided with secondary containment. For this reason multiple, nonduplicative systems, as described in Sections 2641 through 2646, shall be implemented where technically and practicably feasible.

- (c) The initial monitoring of all existing underground storage tanks shall, if feasible, be capable of determining if prior use of the underground storage tank has resulted in an unauthorized release. The soil sampling described in Section 2644 of this article shall be one method to meet this intent. Other methods may be approved by a local agency which achieves this intent.
- (d) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2641 of this article when feasible. If the entire underground atorage tank is not susceptible to visual monitoring, but a significant partion of the underground storage tank can be visually monitored, then that portion of the underground storage tank shall be monitored visually. Visual monitoring that can only be implemented during a portion of the year due to the presence of other liquids shall be utilized during those portions of the year when leasible. However, unless visual monitoring is implemented for the entire underground storage tank throughout the entire year, other ferms of monitoring shall also be implemented.
- (e) All owners of existing underground storage tanks subject to this subchapter and non-able to implement visual monitoring as specified in Section 2641 of this article, shall implement each alternate monitoring mothod specified in Sections 2642 through 2646 of this Article unless the exemption criteria in each section are met. The implementation of

exempted based on the ability to implement visual monitoring unless an alternative monitoring is approved by the local approve to meet the intent of subsection (c) of this section. The exemption criteria are based on a specific method being intensible, not physically implementable or duplicative. If an owner demonstrates to the local agency that the exemption criteria apply the owner shall be relieve: of the obligation to implement the specific method.

agency pursuant to the retent of subsections (h) and (c) of this section. These additional methods may, upon the discretion of the local agency, negate the necessity to implement any or all of the alternatives described in Sections 2642 through 2646.

All where or Lunderground storage tanks shall, it teas\_ble, install a verification monitoring System which monitors ground water beheath the underground storage tank. This system, as described in Section 2647 by this acticle, is intended to assure that the primary leak detection monitoring system described in subsection (b) of this section is functioning properly and that ground water contamination has not excurred. Underground storage tank owners are exempt from this requirement if they meet the exemption criteria contained in Section 2647 of this acticle.

(h) All borings and wells constructed and sampled pursuant to this article shall utilize the construction and sampling methods specified in Section 2648 of this article.

(1) All exploratory borings or soil sample collection borings that are not converted to a cased monitoring well shall be backfilled with bentonite grout or slurry.



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#### 2641. Visual Monitoring

- (a) Visual monitoring shall be utilized as the primary leak detection monitoring method, where feasible, for all on a portion of the underground storage tank. All existing underground tank owners shall implement visual monitoring unless they demonstrate to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable. If visual monitoring is no be implemented, then the provisions of subsections (c) and (d) of this section shall be followed.
- (b) If any one of the following conditions are many the owner is exempted from implementing visual monitoring.

  - (2) It the act of visually inspecting the entire exterior of the underground storage tank would put a person in a physically unsafe
  - (3) If a person would be required to use personal protection equipment (ather than normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.) in order to visually inspect the entire exterior of the underground storage tark.

- (4) If the underground storage tank is located at a facility which is not staffed on a daily basis.
- (5) If liquids are normally or seasonally present in the area image diately beneath or surrounding the underground storage tank.
- (c) A visual monitoring program shall incorporate all of the following:
  - (1) The entire exterior of and the surface impediately beneath the underground storage tank or that portion of the underground storage tank subject to visual monitoring shall be accessible for visual inspection.
  - (2) A written routine monitoring procedure shall be prepared which includes: the frequency of visual inspections, the location[s] from which observerations will be made, the person[s] or position[s] responsible for performing the observations and the reporting format.
  - shall be more traquent if necessary. Any unauthorized release thall remain observable on the exterior of or the surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of he hazardous substance

substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thereof being visually monitored.

- (d) The observation of any liquid on the exterior of or the surface immediately beneath the underground storage tank being visually monitored shall cause the implementation of all or a portion of the following actions or any alternative actions. The applicable actions and their timing shall be based on the site-specific situation; shall be intended to determine if the observed liquid constitutes an unauthorized release; and shall be inpluded in the permit.
  - (1) Laboratory analysis of the specified liquid.
  - (2) Usting of the underground storage tark stiffsing and procedures costrabed in Secsio. 2002 of this artiface.
  - (3) ungering \$11 pez minus simutancia turni n' a findincheacú alexanic

### 2642. Underground Storage Tank Testing

- (a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided in subsection (b) of this section, implement a testing program pursuant to subsections (c) through (g) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing an underground storage tank testing program if they can demonstrate to the local agency that at least one of the following conditions applies:
  - (1) If visual monitoring pursuant to Section 2641 of this article is implemented.
  - (2) If any test which meets the consistions described in subsection (c) of this section cannot be parliormed without significant excavation.
- of detecting a historian substrace loss of it must use a method capable of detecting a historian substrace loss of it must use use their library fitted debugs are limited to those today if it make adjustments for all of the following, if applicable:
  - the presence of vapor pockets,
  - (2) thermal expansion or contraction of the hazardous substance,

- (3) temperature stratification in the tank,
- (4) evaporation,
- (5) pressure variations in the tank, and
- (6) deflection of the tank ends.
- (d) Underground storage tanks shall be tested according to the following schedule:

Category A: Un-clad steel tanks without corresion protection - test 10 years after installation, and yearly thereafter.

Category B: Corrosion resistant tanks1 - test 15 years after installation, and years thereafter.

systems specified in Article 3 and monitored accordingly require no testing.

Common corresion resistant tanks include: fiberglass reinforced plastic (FRP), cathodically protected steel, and FRP-clad steel tanks.

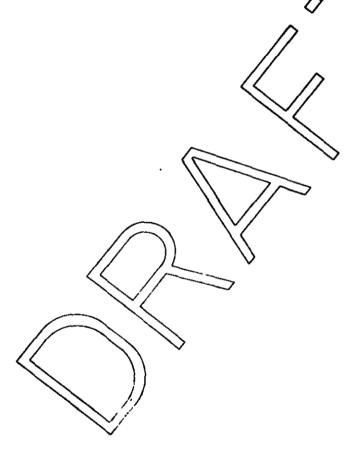
- (e) Within thirty days of completion of the leak detection test, the underground tank owner shall provide the local agency with a report presenting the following information:
  - (1) The procedures used (including any deviations from those recommended by the manufacturer) for the leak detection method;
  - (2) The test results used in determining the volumetric rate of product loss; and
  - (3) The volumetric rate of product loss.

The information shall be presented in written and replace tabular format as appropriate, and shall be at a level of detail appropriate for the test procedure used

- (f) Underground takes which are found to lose croduct at a rate greater than or equal to 0.05 oth shall be repaired or replaced as specified in Articles 6 and 7 respectively.
- (g) The results of any tests performed on the tank at any other interval to determine if the tank is leaking shall be reported by the tank owner to the local agency within thirty days of completion as specified in subsection (e)(3) above.
- (h) All pressure and portions of an underground storage tank shall be monitored utilizing an on-line pressure loss detector and flow reduction device. The detector shall be connected to a visual or

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audible alarm system. The flow reduction device shall reduce the the flow to no more than 50 percent of the minimum flow under non-pressure loss situations (i.e., normal operations).



### 2643. Inventory Control

- (a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided for in subsection (b) of this section, implement an inventory control program as described in subsections (c) through (f) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing an inventory control program if they can demonstrate to the local agency that the hazardous substance is not specifible to accepted technically available metering.
- (c) All tanks shall be individually monitored utilizing a daily inventory control system that takes into account: saily tank quantity measurements for both tank contents and any later layer, daily retail meter delivery records for outgoing product; and daily sholesale meter delivery records for incoming product. Waters shall be approved for use by the County Department of Weights and Measures.
- 'd' Tank quantity measurements shall be based on liquid elevation measurements which are:
  - 1) (apable of measuring to one-eightr of an inch;
  - Performed during periods of no tank additions or withdrawals;
  - (3) Performed by the tank owner, operator or other managerial personnel who have had appropriate training;

- (4) Based on the average of two readings if gage measurements are used;
- (5) Capable of detecting a water layer at the lowest end of the tank, if possible;
- (6) Measured at the center of the longitudinal axis of the tank if access is available or measured at the lowest end of the tank with initial measurements at both ends, if possible, to determine if any tank tilt exists and, if so, its magnitude; and
- (7) Converted to volume measurements based on a calibration chart provided by the tank manufacturer of supplier. This chart shall, if possible take into account the actual tilt of the tank as determined initially as described in subsection (6, above.
- (e) Wholesale meter delivery records shall be verified according to the following procedure which utilizes the criteria described in pubsection (ii) of this section:
  - prior to any delivery, the volume of actual tank contents shall be determined and, if product is to be removed from the tank during delivery, the retail meter totalizer reading(s) shall be recorded.
  - shall be determined and, if product was removed from the tank during the delivery, the retail meter totalizer reading(s) shall be recorded.

- (3) Based on the above readings, a determination shall be made of the increase or decrease in the volume of water in the tank and the increase in the volume of product in the tank. This bigure shall be compared with the metered volume of the product delivery
- (4) A difference of more than the lessor of one-half percent of the delivery volume or 50 gallons, shall be cause for a reevaluation of the measurements. This reevaluation shall initially include collection of the information required in subsection (e)(2) of this section.
- (f) Underground tanks used for abscape of motor vehicle fuers that have a loss or gain of product or water as determined by daily gauging and inventory control of greater than any of the following shall be evaluated according to the methods and time schedules provided for in subsection (f) of Section 2634 of Artisla 3.
  - (1) Daily loss or gain of 30 gallons, or
  - (2) Seven (7) day loss or gain of five percent of the volume of motor webucle fuel delivered over the sever days, or
  - (3) Cumulative (calculated over a period of at least thirty (30) days)
    loss or gain of one-half percent of the volume of motor vehicle fuel
    delivered over the period that the cumulative loss or gain is

2644. Soil Testing and Exploratory Boring

- (a) Except for those tanks that have been granted an exemption under subsection (b) of this section, all owners of exemption underground storage tanks subject to this subchapter shall implement an evaluation as described in subsections (c) through (e) of this section to determine if prior usage of the underground storage tank has resulted in an unauthorized release.
- (b) Exemptions to soil testing at specific underground storage tank locations may be granted by the local agency In any of the following situations exist and if they are confirmed by the local agency:
  - Proximity to physical elected prevent the positioning and operation of drailing equipment within a horizontal distance of 15 feet from the pank.
  - (2) Soil conditions prevent drilling by any generally existing recharges
- (c) As least one stant boring shall be drilled as close as possible to the tank and shall be directed so as to intercept a point that has been projected vertically downward from the midpoint of the tank and is 50 feet below the invert of the tank. If slant drilling and solis collection is not possible, then vertical borings pursuant to subsection (d) of this section shall be implemented.
- (d) Nothose sites where slant drilling is precluded but sertical drilling is feasible, at least one vertical boring shall be drilled on each

side of the tank. The borings shall be located within 10 test of the tank opposite the midpoint of the tank and shall be drilled to a depth of at least 50 feet below the invert of the tank. Soil samples shall be obtained in accordance with Subsection (e) of this section.

- (e) Soil samples shall be obtained from the boring(s) according to the following procedures:
  - (1) Undisturbed soil samples shall be obtained at vertical intervals
    of at least 5 feet from the ground surface to the bottom of the
    boring or to the ground water level in borings embountering ground
    water, whichever occur
  - (2) The soil samples shall be collected, pransported, stored, and analyzed according to approved EPA methods.
  - (3) Analysis of the individual so. 1 semples shall be as follows:
    - (A) If more than one porting is utilized, then samples from the same depth may be composited (if analytically possible without less of constituents, prior to analysis,
    - (B) Samples may be analyzed in any order. If levels of hazardous substances known or suspected to be contained in the underground storage tank are detected (above background if the constituent occurs naturally at the sibal then further soils analysis is not necessary pursuant to this subsection. However, the following additional actions will be required:

- (1) The hazardous substance(s) are assumed to originate from the underground storage tank and further detailed investigations would be needed to prove otherwise.

  The underground storage bank must be clearly demonstrated to not be the source of the hazardous substances (wastes) found or have been properly repaired since the unauthorized release oscurred before a permit can be issued.
- (11) Further investigation is needed to determine the magnitude and extent of any soil or strong water contamination due to the unauthorized release. This may involve, but is not limited to smallers of the remaining soil samples and/or ground water sampling and analysis.

Samples shall be analyzed for one or more constituents that have been stored in the underground storage tank. If the underground storage tank is the unserground storage tank usage has historically changed then analysis shall be for at least one constituent from each period of use. If the stored hazardous substance is known to degrade or transform to other constituents in the soil environment, then analysis shall include these degradation and/or transformation constituents.

according to the Unified Soils Classification System by a registered civil engineer or registered geologist competent in

soils engineering or a certified engineering geologist.

- (5) All wet zones above the free water zone shall be noted and accurately logged.
- (f) If soils analysis indicates that an unauthorized release has occurred the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or abandon the underground storage tank pursuant to Articles 6 or 7 of this subchapter.
- (g) If evidence of an unauthorized release is not detected, a leak detection monitoring system shall be installed pursuant to Section 2645 or 2646 and a verification conferring system shall be installed according to Section 2647.

2645. Vadose Zone Detection Monitoring

- (a) All owners of existing underground tanks subject to this subchapter shall, except as provided in subsection (b) of this mection, implement a vadose zone detection monitoring system pursuant to subsections (c) through (h) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing a vadose zone monitoring of they can demonstrate to the local agency that at least one of the following conditions apply:
  - proximity to physical obstacles present the positioning and operation of oralling equipment, including hand equipment if quitable, within a horizontal distance of 15 feet from the underground storage tanks.
    - trount water is periodically above a point 5 feet below the index of the inderground storage tank and vadow. None monitoring is now possible made to the characteristics (e.g., roncolatility) at the baser, as substance(s) storet. (Caper moritoring is required when possible to complement leak detection ground water appoint or as described in Section 2646 of this article.)
  - (3) Value zone monitoring is not required if the hazardous substance(s) being stored is not susceptible to detection by vadose zone monitoring methods.
  - (4) Visual monitoring pursuant to Section 2641 of this article has been implemented.

- (c) Vadose zone monitoring may consist of vapor monitoring or soil-pore liquid monitoring or a combination of both methods.
- (d) The number, location, and depths of vadose zone monitoring points shall be selected so as to give the earliest possible warning of any unauthorized release from the underground storage tank.
- (e) Subsurface systems shall be located within the tank backfill if at all possible.
- (f) Vapor monitoring for underground storage tanks may be used in accordance with the following criteria of the vapor characteristics of the stored product are susceptible to delection:
  - (1) Before any method of vapor manutor. To be approved for a specific site, it shall be demonstrated by an actual on site demonstration, using an appropriate tracer substance, that vapor would actually be detucted by the installed system.
  - (2) The depth at which each sensor is purposed relative to the tank

    what he determined according to the most probable movement or

    vapor through the backfull in surrecanding soil.
  - So that any leakage that may pond at the horizontal interface between the backfill and natural so is can be detected in the vapor well.

- (g) Soil-pore liquid monitoring of the vadose zone may be approved if the discharger can clearly show that:
  - (1) The stored substance is susceptible to detection by the proposed technique.
  - (2) The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable.
  - (3) The site and soil characteristics will not prevent detection of an unauthorized release using a soil-port Mound senitoring system.
  - (4) The proposed technique will be effective in providing early detection of tank leakage.
- (h) Vadose one monitoring shall be continuous where feasible and connected to an above-ground steam system. Where continuous monitoring is unfeasible, monitoring shall be performed weekly.

- 2646. Ground Water Leak Detection Monitoring
  - (a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided for in subsection (b) of this section, implement a ground water leak detection monitoring system pursuant to subsections (c) through (f) of this section.
  - (b) Owners of existing underground storage tanks are exempted from implementing a ground water leak detection conitoring system if they can demonstrate to the local agency that at least one of the following conditions apply:
    - (1) Visual monitoring pursuant to Section 2641 of this arefule has been implemented.
    - (2) A vadose monitoring system pursuant to Section 2645 of this article has been implemented and ground water is and will be at least 5 feet pelow the invert of the underground storage tank.
    - (3) The proximity to physical obstacles prevent the positioning and operation of artiling equipment within a horizontal distance of 50 feet from the tank.

Soil conditions prevent drilling by any generally existing technique.

(c) At those sizes at which vadose zone monitoring is feasible and the ground water level fluctuates above and below a point 5 feet below the tank invert, a combination of ground water monitoring and vadose

monitoring shall be used. The ground water monitoring wells shall extend 20 feet below the lowest anticipated ground water level in order to provide verification monitoring pursuant to Section 2647 during periods of low ground water.

- (d) When the ground water level is above a point 5 feet below the tank invert and ground water is used as the primary leak detection technique, vapor monitoring will also be used whenever possible.
- (e) The primary ground water monitoring natwork shall be designed and constructed according to the following ariteria:
  - the underground storage task of Eaglity at spacings of 1200 of arc around the central point of the underground storage tank of facility. Additional borings shall be installed at closer angular spacings if the straight line distance between wells exceeds 30 feet. If it can be demonstrated that the radii of influence of fewer monitoring wells overlap and that the entire area of the underground storage tank or facility is under the influence of at least one well under all anticipated hydraulic conditions, fewer wells may suffice. All wells should be located as close as possible to the underground storage tank or the perimeter of the facility.

One of the three wells shall be located such that it represents the best estimate of the downgradient direction.

- (3) The ground water monitoring wells shall be constructed as grave, packed water wells with a minimum 4-inch inside diameter (ID) casing and in accordance with the provisions of Section 2648.
- (4) All wells shall be provided with a minimum surface seal to prevent infiltration of surface water but the seal shall extend to a depth of at least 5 feet.
- (5) Monitoring wells at which the ground water elevation is above the base of the surface seal shall be sized and equipped with a pump capable of drawing the ground water level down to an elevation 10 feet below the base of the surface seal.
- (6) The ground water monitoring wells shall extend to an elevation that is at least 10 feet below the tank invert and shall be perforated from the base of the surface seal to the bottom of the well.
- (f) Ground water shall be monitored at least once per week from each well. More frequent monitoring may be required by the local agency.

  Sampling and analysis, if applicable shall be according to Section 2648 of this article.

2647. Verification Ground Water Monitoring

- (a) All owners of existing underground storage ranks subject to this subchapter shall, except as provided in subsection (b) of this section, implement a verification ground water monitoring system pursuant to subsections (c) through (g) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing a verification ground water monitoring system if they can demonstrate to the local agency that at least one of the following conditions apply:
  - (1) Ground water monitoring pursuant to Section 2646 of this article is used as the primary means of leak detection.
  - (2) The highest ground later level possible during the life of the

Proximity to physical obstacles prevents the positioning and operation of the driving equipment within a horizontal distance of 200 feet of the tank or tank cluster perimeter.

- N) Soil conditions prevent drilling by any generally existing becknique.
- (c) Verification ground water monitoring networks shall be established according to the following criteria:
  - (1) At those underground tank facilities at which the highest anticipated ground water elevation is between a depth of 5 feet

below the tank invert and a point 100 feet below the ground surface, a ground water monitoring system as described in Section 2646(e), subsections (1) through (5) of this article shall be installed. The wells shall extend to the base of the aquifer or to a depth of 100 feet, whichever is lesser and shall be perforated from 10 feet above the highest anticipated ground water elevation to the bottom of the well.

- (2) At those underground tank facilities at which the highest anticipated ground water elevation is between 100 feet and 200 feet, a monitoring well shall be installed at a location that represents the best estimate of the downgradient direction. The well shall extend to the base of the aquifer or to a depth of 200 feet, whichever is lessor, and shall be perforated from 10 feet above the highest anticipated ground water elevation to the bottom of the well.
- (d) In order to implement subjection (c) of this section, the depth to ground water must be accurately determined. This shall be accomplished either by documentation of the ground water elevation in all existing wells within 500 feet of the facility or an exploratory boring constructed as follows:

An exploratory boring shall be drilled in the anticipated downgradient direction from the underground storage tank. More than one exploratory boring may be required where geohydrologic conditions are complex or to adequately cover a facility that occupies large areas.

- (2) The exploratory boring may be of any diameter capable of allowing the detection of first water and the proopery of undisturbed soil samples.
- (3) The exploratory boring shall be drilled by a dry drilling technique that permits the detection of the zones and first water.
- (4) The exploratory boring shall be within 10 feet of the tank. If physical constraints preclude drilling within 10 feet of the tank, the boring shall be drilled as near as possible to the tank, but no further than 50 feet from the tank.
- (5) The exploratory soring shall be drilled to a minimum depth of 200 feet if ground water is pet empountered at a depth of less than 200 feet.
- (6) If ground water is encountered within a depth of 200 feet in addition to the requirements of subsection (c) of this section, the following shall also apply:
  - The exploratory boring shall be modified if necessary, and bonstructed as a gravel-packed water well with a minimum 4-inch ID casing.
  - In the case of unconfined ground water aquifers, the exploratory well shall extend a minimum of 20 feet below the ground water surface or 20 feet below the lowest known historical ground water level in the area, whichever is lowest. The well shall

- be perforated from the tank bottom elevation to 20 feet below the ground water surface or the lowest known historical ground water level in the area, whichever is lowest.
- (C) In the case of confined aguifers, the well shall extend to the bottom of the aguifer and shall be perforated from the tank bottom elevation to the bottom of the well.
- (7) If the exploratory boring does not encounter ground water within a depth of 200 feet. The exploratory boring shall be backfilled with bentonite grout or slurry.
- (e) Wells shall be sampled semi-amphally at a misumum. More frequent sampling may be required by the local agency. Samples shall be taken after sufficient volumes of water have been removed from the well such that phi temperature and conductivity are stabilized.

  Sampling equipment shall not donate, capture, mask or alter the sample constituents.
- (f) Analysis shall be performed for all constituents stored in the underground storage tank.
- (g) Samples shall be collected, stored and analyzed according to approved BRA methods.

2648. Well Construction and Sampling Methods

- (a) The sampling equipment and materials used to construct a well shall be compatible with the stored product and shall not donate, capture, nor mask-product constituents for which analyses will be made.
- (b) All imported materials used to bickfill wells and to form seels shall be tested to determine their acceptability with regard to subsection (a) of this section.
- (c) All drilling tools shall be cleaned immediately before a boring is started and immediately after a boring is completed.
- (d) All well casings casing firtings, screens, gravel pads and all other components are to be thoroughly oleaned before installation in the boring.
- (e) All soil and water samples shall be cleaned before eac sample is taken.
- naterials which contain the provisions of subsection (d) of this section. All additives used and the depth in which they were used are to be precisely recorded in the boring log.
- (g) Samples of additives, cement, bentonite, and grouts shall be analyzed for contaminating or interfering constituents.
- All yell casings shall have a bottom cap or plug.
- (1) All wells shall have a surface seal. Ground water monitoring wells shall be sealed from the ground surface to the top of the perforations.

The depth of surface seals for vapor wells shall be the muhimum necessary to prevent infiltration of surface water but shall not be less than 5 feet deep.

- (j) All ground water monitoring wells shall be properly developed.
- (k) Well heads shall be provided with a locking water tight cap.
- (1) Well heads shall be enclosed in a surface security structure that will protect the well from the entry of surface water, accidental damage, unauthorized access and vandalism.
- (m) Pertinent well information including well identification; well type, depths, boring and casing diameters, and perforated depths shall be permanently afixed to the interior of the surface security structure and the well identification number and well type shall be afixed on the exterior of the surface security structure.
- (n) Initial borings or wells to determine the tepth to ground water shall be capable of allowing the collection of undisturbed soil samples and shall utilize a dry orilling technique that permits the detection of west zones and first water.

Article 5. Release Reporting Requirement

Adopt new section to read:

#### 2650. Applicability

- (a) All unauthorized releases from the primary or secondary container must meet the reporting, clean-up and discosal requirements of this section.
- (b) All unauthorized releases shall be reported. The nature and timing of the reporting is divided into two groups depending on the threat to contaminate soil and water as a result of the release. This article describes the various reporting requirements and actions which must be implemented by the owner or permittee and the local agency.
- (c) Unauthorized releases requiring only initial recording with reporting comleted as part of the normal operating reports are defined in Section 2651 of this article.
- (d) Unauthorized releases requiring immediate reporting are defined in \_\_\_\_\_Section 2652 Of this article.

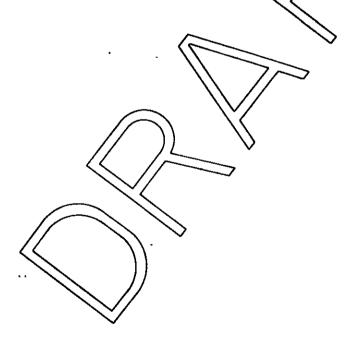
# 2651. Unauthorized Release Requiring Recording

- (a) A recordable unauthorized release is any unauthorized release of a hazardous substance which meets all the following cruteria:
  - (1) The hazardous substance released is from the primary container.
  - (2) The hazardous substance released does not escape from the secondary container or cause any deterioration of the secondary container.
  - (3) The hazardous substance released can be cleaned up within eight hours.
  - (4) The hazardous substance released does not increase the hazard of fire or explosion.
- (b) All recordable unauthorrsed release shall be contained and the released hazardous substance shall be safely transported and legally disposed of in an appropriate manner by the permittee. Such an occurrence shall be reported in the permittee's monitoring reports as required in the permit and shall include:
  - (1) List of type, quantities and concentration of hazardous substance released.
  - (2) Nethod of clean-up and cost.
  - (3) Method and location of disposal of the released hazardous substances (include copy of hazardous waste manifest[s] if utilized).

- (4) Method of future leak prevention or repair if this involves a change as defined in Article 10, Section 2002, Subsection (a) of this subchapter, then appropriate reports pursuant to that article shall also be filed.
- (5) If the primary container is to continue to be used, then a description of how the monitoring system between the primary and secondary container has been re-activated.
- (6) Facility operator's name and telephone number.
- (c) The local agency shall review the information submitted pursuant to Subsection (b) of this section and the permit and may inspect the underground storage tank pursuant to the provisions of Article 10, Section 2702, Subsection (g) of this subchapter. The local agency shall find that the Containment and monitoring standards of Article 3 of this subchapter can continue to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow compliance with the standards.
  - Deterioration of the secondary container is likely when any of the following conditions exist:
  - (1) The secondary container will have some loss of integrity due to contact with the stored hazardous substance; or

The mechanical means used to clean-up the released hazardous substance could damage the secondary container; or

- (3) Hazardous substances, other than those stored in the primary container are added to the secondary container for present or neutralization of the released hazardous substance as part of the clean-up process.
- (e) If a recordable unauthorized release becomes a perortable unauthorized leak due to initially unanticipated facts, the release shall immediately be treated as a reportable release pursuant to Section 2652 of this article.



#### 2652. Unauthorized Releases Requiring Immediate Reporting

- (a) All unauthorized releases which are described by either Subsection (1) or (2) of this subsection shall be reported as specified in Subsection
   (b) of this section. In addition the requirements of Subsections (c).
   (d) and (e) of this section shall be followed.
  - (1) A reportable unauthorized release is any unauthorized release of hazardous substance which meets any of the following criteria:
    - (A) The released hazardous substance escapes from the secondary container assuming that a secondary container exists.
    - (B) The released hazardous substance increases the hazard of fire or explosion.
    - (C) The released hazardous substance sauses any deterioration of the secondary container.
  - (2) An unauthorized release of a hazardous substance that occurs from an underground storage tank that does not have a secondary container.

    This includes unauthorized releases from pressurized piping which is monitored by a pressure loss detector as described in Article 3, Section 2633, Subsection (f) of this subchapter.

- (b) All unauthorized releases meeting the criteria of Subsection (a) of this section shall be reported within 24 hours after the release has been detected or should have been detected. The operator or permittee shall notify the local agency, Office of Emergency Services and the Regional Water Quality Control Board.
- (c) Within five working days of the occurrence the operator or permittee shall submit to the local agency a full written report to include:
  - (1) List of type, quantity and concentration of hazardous substances released.
  - (2) The results of all investigations completed at that time to determine the extent of soil or ground water or surface water contamination due to the release.
  - (3) Method of clean-up implemented to-date and cost and proposed clean-up actions.
  - (4) Method and location of draposal of the released hazardous substance and any contaminated soils or groundwater or surface water (include copy of hazardous waste manifest[s] if utilized).

- (5) Proposed method of repair or replacement of the primary and secondary containers. If this involves a change as defined in Subsection 2702(a) of Article 10, then appropriate reports pursuant to that article shall also be fixed.
- (6) Facility operator's name and telephone number.
- (d) Until clean-up is complete the operator or permittee shall submit reports every three months or at a more frequent interval specified by the local agency or Regional Board to the local agency and the Regional Board. The reports shall include the information requested in Subsections (cl(2), (c)(3) and (c)(4) of this section.
- (e) The local agency shall review the permit whenever there has been an upauthorized release or when it determines that the underground storage tank is undate. In determining whether to modify or terminate the permit, the local agency shall consider the age of the tank, the methods of containment, the methods of monitoring, the feasibility of any required repairs, the concentration of the hazardous substances stored in the tank, the severity of potential unauthorized releases, and the suitability of any other long-term preventive measures.
  - The reporting requirements of this section are in addition to any reporting requirements specified by other laws and regulations.

(g) The local agency, Regional Board, and Department of Health Survices or other governmental agency may, pursuant to other laws or regulations, request the permitte to investigate the extent of soil, groundwater or surface water contamination that resulted from the unauthorized release and to implement appropriate remedial action.



### Article 6. Allowable Repairs

### 2660. Applicability

- (a) This article describes the conditions which must be met in allow primary container repairs, to allow the use of interior coasing of hazardous substance storage tanks in order to repair the tank, the required repair methodology and the required tank testing following repair.
- (b) Section 2661 lists the required evaluations which must be completed in order to allow the repair of a primary container. A satisfactory demonstration of each part of Section 2661 shall be made prior to approval by the local adency of the repair process.
- (c) Section 2662 describes the required methodology which must be utylized in the interior coating repair process.
- (d) Section 3665 lists the required primary container monitoring
  which shall be implemented by amendment of the permit by the
  local agency following primary container repair. Subsections (a)
  and (b) beacribe the monitoring which shall be performed prior to
  placing the underground storage tank back in service.

### 2661. Repair Evaluation

- (a) The evaluations described in Subsections (b) through (d) of this section must be completed before a primary container repair can be allowed. Failure to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below shall be adequate rationale for a local agency to deny the proposed repair.
- (b) It shall be determined if the failure mechanism is related to the actual failure or is affecting other areas of the tank or if any other failure mechanism is affecting the primary container.
- (c) If interior lining is the proposed remain method, a demonstration that the actual failure may not have resulted from any one or more of the collowing conditions shall be made:
  - (1) a linear space of more than three (3) inches;
  - 2 a single hole with a diameter of greater than one (1) inch; or
  - (3) more than ten (10) small perforations.

- (d) If interior lining or plate replacement of a steel tank is the proposed repair method, then it shall be demonstrated to the satisfaction of the local agency based on an ultrasonic or comparable test that a serious corrosion problem exist. If a serious corrosion problem exists, an interior linion repair may be allowed if it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threater the structural integrity or containment applicate of the tank.
- tf interior lining is the proposed repair method, then it shall be demonstrated that the primary container has never been repaired using an interior lining.

#### '662. Repair Methodology

- (a) If a tank repair is approved based on satisfactory demonstration of the issues raised in Section 2661, then the regain must be accomplished according to the applicable subsections of this section.
- (b) If interior coating is the method of repair, the material used in the repair shall be applied in accordance with nationally recognized engineering practices. An example of such a practice is the American Petroleum institute's recommended practice No. 1631.
- (c) The repair material and any adherives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to contact with the mazardous substance being stored.

# 2663. Primary Container Monitoring

- (a) After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the standard installation tests specified in Section 2-7.3 of the Flammable and Combustable Liquids Code adopted by the National Fire Protection Association on November 20, 1981 (NFFA 30-1981).
- (b) All pipelines shall be pressure tested following repair to assure the adequacy of the repair. The testing shall be accomplished using procedures described in the applicable sections of ANSI B31, American National Standard Code of pressure Proing of National Fire Protection Association Flammable and Computatible Liquids Code

(NFPA 30).

Article 7. Closure Requirements

#### 2670. Applicability

- (a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of those situations.
- (b) The temporary closure requirements of Section 2671 shall apply to those underground storage tanks in which the storage of hazard materials has ceased but where the tank owner or operator proposes to retain the ability to use the tank within two years for the storage of hazardous materials. Section 2671 does not apply to tanks that are empty as a sesult of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous material consistent with permit conditions.
- (c) The permanent closure resurrements of Section 2672 shall apply to those underground storage tanks in which the storage of hazardous materials has ceased and where the owner or operator has no intent within the next two years to use the underground storage tank for the storage of hazardous materials.
- (d) The requirements of this article do not apply to those underground storage tanks in which hazardous materials are continued to be stored even though there is no use being made of the stored material.

  In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

- (e) During the period of time between cessation of waste storage and actual completion of underground storage tank closure pursuant to Sections 2671 or 2672 the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.
- (f) At least 45 days prior to cessation of storage of hazardous materials, unless such cessation occurs as a result of an unauthorized release or in order to prevent an unauthorized release or minimize its effect, the underground storage tank owner shall submit to the local agency a proposal describing how the owner integes to comply with Section 2671 or 2672 of this article as appropriate.
- (g) Underground storage tanks that have experienced an unauthorized release do not qualify for temporary classice pursuant to Section 2671 of this article Until the tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made that would allow the underground storage tank to be capable of atoring hazardous materials pursuant to the permit issued by the local agency.
- (h) Underground storage tanks that have experienced an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 of this subchapter.

#### 2671. Temporary Closure

- (a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator prospess to retain the ability to use the underground storage tank within two years for the storage of hazardous substances.
- (b) The owner or operator shall comply with all of the following:
  - (1) All residual liquid, solids on sludges shall be removed and handled as follows:
    - (A) product legally stored for future but or handled as
      a hazardous waste
    - (8) hazardous waste legally recycled or disposed of as a hazardous waste.
  - the underground storage tank contained a hazarbous substance that could produce flammable vapors at standard temperature and oressure, then the underground storage tank, either in part or as a whole, shall be completely purged of the flammable vapors.
  - (3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance.
    - AM fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs.

- (5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank except if the pump services some other equipment which is not being closed.
- (c) All monitoring required pursuant to Article 4, exempt visual monitoring, shall be continued. The frequency of this monitoring may be reduced.
- (d) The underground storage tank shall be inspected at least once every three months to assure that the temporary closure actions are still in place. This shall include:
  - (1) Visual inspection of all locked caps and concrete plugs.
  - (2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground strage tank or if there has been a change in the quantity or type of liquid added pursuant to subsection (b) (3) of this section.

2672. Permanent Closure Requirements

- (a) Underground storage tanks subject to permanent chaster shall comply with either subsection (b) for tank system removal or subsection (c) for closure-in-place. It is not essential that all portions of a tank system be permanently closed in the same manner; however, all actions shall comply with the appropriate subsection. Subsection (d) regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.
- (b) Removal of underground storage tanks shall comply with subsections
   (1) and (2) and either subsections (3), (4), or (5) as appropriate:
  - (1) All residual liquid, solids or sludges shall be removed and handled as follows.
    - (A) product legally shored for future use or handled as a hazardous waste
    - hazardous waste legally recycled or disposed of as a baserdous waste.
  - (2) If the underground storage tank contained a hazardous material that could produce flammable vapors at standard temperature and pressure, then the underground storage tank, either in part or as a whole, shall be completely purged of the flammable vapors.

- (3) An underground storage tank or any part of an underground storage tank that is destined for disposal shall be pandled, transported and disposed of as a hazardous waste. The tank system or any part of the tank system may be handled, transported or disposed as a nonhazardous waste after it has been properly cleaned. In either case, the owner must document to the local agency that proper disposal has been completed.
- (4) An owner of an underground storage tank of any part of an underground storage tank that is destined for a specific reuse shall comply with all of the following:
  - (A) Reuse shall not be inconsistent with either laws or regulations which may exist as they may relate to the nature of the hazardous material in the underground storage tank or the nature of the proposed reuse; and
  - (B) The owner of an execting underground storage tank shall identify to be local agency the future underground storage tank owner, operator, location of use and makers of use.
  - An owner of an underground storage tank or any part of an underground storage tank that is destined for reuse as acrap material shall comply with all of the following before the underground storage tank or any part of the underground storage tank is removed from the facility unless such removal is

done according to the provisions of subsection (b)(4) of this section:

- (A) The tank system shall be thoroughly cleaned
- (B) The tank system shall be put or punctured in sufficient locations to render at obviously unfit for use;
- (C) Apply appropriate marnings to the tank.
- (c) Closure of underground storage tanks in place shall comply with all of the following:
  - (1) All residual Highed, solids, or sludger shall be removed and handled as follows:
    - (A) product legally stored for future use or handled as a hazardous waste.
    - (B) hazardous waste legally recycled or disposed of as a managed waste.
  - and disposed of as a hazardous waste.
  - (3) The tank shall be completely filled with an inert solid such as sand or concrete.
  - (4) A notice shall be placed in the deed to the property. The notice shall describe the exact vertical and areal location of the closed tank, the hazardous substances it contained and the closure method.

(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration can be based on the ongoing leak detection monitoring, verification ground water monitoring or soils sampling performed during or immediately after closure activities.

If feasible, soil samples shall be taken and analyzed according to the following:

- (1) If the underground storage tank or any portion thereof is removed then soil samples from the soils immediately beneath the removed portions shall be taken. A separate sample shall be taken for every 200 square feet or every 20 lineal feet for piping
- (2) If the underground storage tank or any portion thereof is not removed, then soils sampling pursuant to Section 2644 of Article 4 shall be implemented, if feasible.
- Soils shall be analyzed for all constituents contained in the previously stored hazardous substances and their breakdown or transformation products.
- (e) The debection of any unauthorized release shall require compliance with the reporting requirements of Article 5.

Article 8. Categorical and Site-Specific Variance/Procedures

Adopt new section to read:

#### 2680. Applicability

- (a) This article sets up procedures for categorical and site specific variances from Articles 3 and 4 of this subchapter. A site-specific variance, if approved, would only apply to the specific site approved for a variance. A categorical variance, if approved, would apply to the region, area or circumstances approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific.
- (b) Section 2691 apacities the precedures that must be followed by the applicant and the State Board for gategorical variance requests.
- (c) Section 2662 specifies the procedures that must be followed by the applicant, local agency and the Regional Board for site-specific variance requests.

#### 2681. Categorical Variances

- (a) A categorical variance is an alternative method of construction or monitoring which is applicable to more than one site. Application for a categorical variance shall be made by the permittee to the State Board.
- (b) Application for a categorical variance shall be made on a state application form provided by the State Board and shall include but not be limited to:
  - (1) Provision from which the variance is requested.
  - (2) Description of the proposed alternative program, method, device or process.
  - (3) Description of the region, area on circumstances under which the variance yould apply.
  - (4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of water of the state from an unauthorized release.
  - A list including names and addresses of all local agencies and persons who may be affected by or may be interested in the variance request.
  - (6) A fee d

- (c) The State Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.
- (d) The State Board shall complete any documents necessary to eatisfy the California Environmental Quality Act (Division 13, commencing with Section 21000, of the Public Resources Code).
- (e) The State Board shall remand the application to the appropriate Regional board if it determines that the application falls within Section 2682.
- areas of the state within 180 days of seperpt of a complete variance application to consider the request for a categorical variance. Motice of the reacting shall be provided at least 10 days in a vance to any person who requests such notice in writing. Notice small also be provided to the provided and agencies and the any person known to the provided in the proceedings. The notice shall specify the date, time is the parameter of the hearing, and shall include a resorription of the proposed sategorical variance. When the notice is smalled, it shall be placed in the mail at least 11 days in advance of the hearing.
- (g) All hearings shall be conducted according to the regulations governing adjudicatory proceedings which are contained in Subchapter 1.5 of this Chapter. The State Hoard in its discretion may require that, not later than '0 days prior to the hearing, all interested parties intending to

- participate shall subsit to the State Board in writing the name of each witness who will appear, together with a statement of the qualifications of each expert witness, the subject of the proposed testimony and the estimated time required by the witness to present his direct testimony. The State Board may also require that copies of proposed exhibits be supplied to adverse parties and seven copies be supplied to the Board not later than 10 days prior to the hearing.
- (h) An applicant for a categorical variance must demonstrate by clear and convincing evidence that the proposed alternative while adequately protect the soil and the beneficial uses of water of the state from an unauthorized release.
- (1) The decision of the State Board while be based on that evidence and testimony in the record of the hearings. The record may be supplemented by any other evidence and testimony accepted by the State Board pursuant to the procedure outlined in Section 2066 of Subchapter 6 of this Chapter. Upon the close of a hearing, the presiding officer may keep the hearing record open for a definite time, not to exceed thirty days, to allow any interested person to file additional exhibits, reports or affidavits.
- (j) See State Board may discuss a proposed decision in response to a request for a categorical variance at a workshop meeting. The regulations coverning workshop meetings and formal disposition of State Board matters for decision which are contained in Subchapter 6 of this Chapter shall apply.

- (k) If the State Board grants the variance, it will prescribe the conditions the applicant must maintain and vill describe the specific alternative for which the variance is being granted.
- (1) All permit applicants who intend to orilize an approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the variance applies, the local agency shall issue a permit to the applicant which includes the conditions professibed by the State Board.
- a finding that the proposed alternative does not adequately protect
  the soil and the beneficial uses of the water of the state from an
  unauthorized release. The state Board will not modify or revoke
  a pategorical variance until it has followed procedures comparable
  to those outlined herein for approval of a categorical variance.
  The State Board shall notify all affected local agencies of the modification or revocation and shall require the local agencies to modify or
  revoke all site permits which were based on the categorical variance.

#### 2682. Site-Specific Variances

- (a) A site-specific variance is an alternative method of construction or monitoring which would be applicable at one facility location.

  Application for a site-specific variance shall be made by the permittee to the appropriate Regional Board.
- (b) At least 60 days prior to applying to the Regional Board, the permittee shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods, or if the local agency does not act within 60 days, of its receipt of the permittee's complete construction and monitoring, the permittee may proceed with a variance application.
- (c) At least 30 days prior to applying to the Regional Board, the permittee must request the local agency and the city, county or city and county having land use jurisdiction over the permittee's site to join the applicant in the variance request. The local agency shall also be requested to prepare any documents required by California Environmental fundity Act (Division 13, Commencing with Section 21000, of the Public Resources Code).
- (d) The local agency shall have 30 days after completion of the documents or the receipt of the Regional Board's staff recommendation and analysis, whichever is later, to decide whether to join the applicant in the variance request.

- (e) Application for a site-specific variance shall be made on a state application form provided by the appropriate regional Board and shall include but not be limited to:
  - (1) Provision from which the variance is requested.
  - (2) Detailed description of the complete construction and monitoring methods to be used. The proposed alternative program, method, device or process shall be clearly identified.
  - (3) Clear and convincing evidence descripting that:
    - (A) Due to special circumstances not generally applicable to other property or facilities, including size, shape, design, topography, location or surroundings the strict application of Articles 3 or 4 of this subchapter would be unnecessary to adequately protect the soil and beneficial uses of the waters of the state from an unauthorized release; or
    - (B) The strict application of Articles 3 or 4 of this subchapter could create practical difficulties not generally applicable to other facilities or property.
  - (4) That the proposed alternative will adequately protect the soil and the beneficial uses of water of the state from an unauthorized resease.
  - (5) Any documents necessary to satisfy the California Environmental Quality Act (Division 13, commencing with Section 21000, of the

Public.	Rescurces	Code)

(6)	A	fee	of		
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- (f) The Regional Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.
- (g) The Regional Board shall hold a hearing on the proposed alternative within 120 days after receiving a complete variance application; however, the hearing shall be held after the 30-day period described in subsection (d) of this section has expired. Notice of the hearings shall be provided at least 10 days in edvance to any person who requests such notice in writing. Notice shall also be provided to all affected local agencies and to any person whom to be interested in the proceedings. The notice shall specify the date, time and location of the hearing, and shall include a description of the proposed categorical variance. When the notice is mailed, it shall be placed in the mail at least 11 days in glyance of the hearing.
- (h) All meatings shall be conducted according to the regulations governing adjudicatory proceedings which are contained in Subchapter 1.5 of this Chapter. The reguonal Board in its discretion may require that, not later than 10 days prior to the hearing, all interested parties intending to participate shall submit to the Board in writing the name of each witness who will appear, together with a statement of the qualifications of each expert witness, the subject of the proposed

testimony and the estimated time required by the witness to present his direct testimony. The Regional Board may also require that copies of proposed exhibits be supplied to adverse parties and seven copies be supplied to the Regional Board not later than 10 days prior to the hearing.

- (i) Any variance so issued will prescribe the conditions the applicant must maintain and will describe the specific alternative system for which the variance is being granted. The Regional Board shall notify the applicant and the local agency of its decision.
- (j) The Regional Board shall consider the local agency's and the city, county, or city and county's recommendations in rendering its decision.

  The Regional Board shall consider the completeness and accuracy of the information provided by the applicant in subsection (e) of this section in rendering its decision.
- If the variance request is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the regional Board. A local agency shall not modify the permit unless the determines that the modification is consistent with the variance than has been granted.
- (1) The Regional Board shall modify or revoke a variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the water of the state from an unauthorized release. The Regional Board will not modify or revoke the variance

until it has followed procedures comparable to those outlined herein for approval of a variance. The Regional Board shall netify the local agency of the modification or revocation and shall require the local agency to modify or revoke the permit for the site.



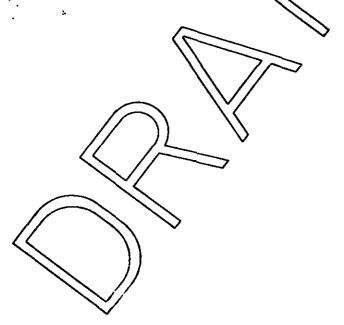


Article 9. Local Agency Additional Standards Request Procedures

Adopt new section to read:

2690. Applicability

(a) This article sets up procedures for local agencies to request State
Board authorization for more stringent standards than those set
by Articles 3 and 4 of the Subchaptar



2691. Additional Standards Request Procedures

(a) Local agency application for additional standards shall pockede:

(1) Description of the proposed design and construction standards.

(2) Clear and convincing evidence that the additional standards are necessary and would adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases.

(3) Any documents required by the California Environmental Quality
Act (Division 13, commencing with Section 21006) of the Public
Resources Code.

(4) A fee of

(b) The board will conduct in investigation and public hearing on the proposed standards and their need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to hapkement additional standards. The notice and other procedural requirements contained in Sections (d) through (j) at article 8 of this Subchapter shall apply.

- (c) The board shall make its determination whether to authorize a local agency to implement additional standards within six months of the receipt of a complete application
- (d) Should the board authorize the local agency to implement additional standards, the standards shall be effective as of the date the board made the determination.
- (e) Should the board not authorize the local agency to implement additional standards, the additional standards will not go into effect.
- (f) The State Board has modify or revoke previously issued authorization allowing the brokementation of additional standards if it finds that, cased on new evidence, the additional standards are not necessar, to adequately protect the soil and beneficial uses of the waters of the State from unauthorized releases. The State Board will not mainly or revoke the authorization until it has followed procedures comparable to those putrimed herein for issuance of the authorization.

Article 10. Permit Application, Annual Report and Trade Segret Requirements

#### 2700. Applicability

- (a) This article describes specific administrative actions that must be accomplished by all tank owners, local agencies and the State Board relative to issuing permits for underground storage tanks.
- (b) Section 2701 lists the information that must be submitted by the tank owner to the local agency as part of the permit application and the requirements for the local agency to submit the permit application to the State Board.
- (c) Section 2702 describes the conditions that local agencies must include in all permits issued and conditions local agencies must meet prior to permit issuance.
- (d) Section 2703 describes the unual report requirements for both tank owners and local agencies.
- (e) Section 2704 specifies conditions that must be met by a tank owner when requesting trade secret provisions for any information submatted to the local agency or State Board or Regional Board. It also specifies how the local agency, the State Board or Regional Board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

#### 2701. Permit Application and Information

- (a) An application for a permit to operate an underground storage tank, or for renewal of the permit or for transfer of a permit shall be made by the owner on a form prepared by the State Board and provided by the local agency. The local agency shall provide the Board with a copy of the completed approved application within 30 days.
- (b) The permit application shall include, but not be limited to, the following information if it is accurately known to the permit applicant:
  - (1) The name and address of the person, film, corporation or public agency which owns the underground storage tank or tanks,
  - (2) The name, location, mailing address phone number and type of facility where the underground storage tank is located and type of business including SIC number.
  - (3) The name, address and telephone numbers of the underground storage tank operator and 24-hour emergency contact person.

The name and talephone nukmber of the person making the application.

(5) The bodarground storage tank description including, but not limited to tank and auxiliary equipment manufacturer, year of manufacture, capacity, history of repairs and operation methods schedule.

- (6) The underground storage tank (tank, piping and auxiliary equipment) construction details, including but not limited to, type and thickness of primary containment, type and thickness of secondary containment (if applicable), installation procedures and backfill, liming, wrapping, and cautotic protection methods (if applicable).
- (7) A diagram or design or as built drawing which indicates the location of the underground storage tank (tank, piping, auxiliary equipment) with respect to buildings or other landmarks.
- (8) The description of the proposed sonitoring program, including, but not limited to the following where applicable:

Lusual;

(B) tank testing or inspection procedures;

ethods;

soils sompling locations and methods and analysis

vadose zone sampling locations and methods and analysis procedures;

- (F) ground water well(s) locations, construction and completion methods, sampling and analysis projections
- (G) frequency and sensitivity of any monitoring method sensing instrument, or analytical method,
- (9) A list of all the substances which previously, currently or are proposed to be stored in the underground storage tank or tanks.
- (10) If the owner or operator of the underground shall is a public agency, the application shall include the hape of the supervisor of the division, section, or office which operates the tank.
- executive officer at the level of vice president or by an authorized representative. The representative must be responsible for the overall operation of the facility where the tank(s) are located, (B) a general partner proprietor, of (C) a principal agentive officer, ranking elected official or authorized representative of a public agency.
- may require a fee to gover necessary and reasonable costs of permitting and inspection of the underground storage tank. This fee shall include a supcharge determined annually by the legislature to cover the costs of State Board in carrying out its responsibilities under these regulations.

10.4

#### 2702. Permit Conditions

- (a) As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority at least 30 days polor to the change ary changes in the usage of any underground storage tanks, including:
  - (1) the storage of new hazardous substances; or
  - (2) changes in monitoring procedure;
  - (3) the replacement or repair of all ar part of any underground storage tank.
- (b) As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency any unauthorized release occurrences (as defined in Article 2 within the time frame specified in subsections 1652(b) and (c)).
- (c) A permit to operate issued by the local agency shall be effective for five perms. A local agency shall not issue or renew a permit to operate an underground storage tank until the local agency inspects the tank and determines the tank complies with the provisions of these regulations. The tank owner shall apply for renewal at least 180 days prior to the expiration of the permit.
  - Permits may be transferred to new tank owners if the new tank

    coner does not change any conditions of the permit and the transfer

    is registered with the local agency within 30 days of the change

- in ownership by submittal of a revised permit application listing the new owner and any modifications to the information in the initial permit application due to the change in ownership. A local agency may review, modify or terminate the transfer of the permit to operate the underground storage tank upon receiving the transfer request.
- (e) If an underground storage tank does not completely conform with Articles 3 or 4 of this subdivision, a local argancy at its discretion, may issue a provisional permit subject to conditions specified by the local agency and providing such a permit would not be detrimental to the public's interest. The conditions shall, at a minimum, include a time schedule for upgrading the underground storage tank such that it conforms with Articles 3 or 4 of this subdivision on is closed pursuant to Article 7 of this subdivision. These time schedules shall not extend beyond the duration of the provisional permit. A provisional permit will be issued for no longer than three months and cannot be renewed or extended. The local agency shall inspect the underground storage tank pursuant to the provisions of subsection (g) of this section within 15 days of the expiration of the provisional permit to assure that the permit conditions have been met.
- (f) The local energy shall not renew an underground storage tank
  permit unless the underground storage tank has been inspected
  within the prior three years and the inspection revealed that the

underground storage tank complies with Articles 3 or 4, as applicable of this subchapter and with all existing permit conditions. The inspection shall be conducted as specified in abbection (g) of this section. If the inspection revealed noncompliance, then the local agency must verify by a follow-up inspection pursuant to subsection (g) of this section that all profited corrections have been implemented.

- within its jurisdiction at least once every three years. The inspection which shall evaluate the items listed in subdivision (h) of this section may be performed by the local agency or by a special inspector employed by the permit holder as required by the local agency, or both. If a special inspector conducts any or all of the inspection a copy of the special inspector's report which may contain recommendations concerning the safe attrace of hazardous materials shall be filed with the local spency at the same time as it is submitted to the permit holder. Any detictencies or items of noncompliance found shall be addressed as tescribed in subsection (i) of this section.
- (h) The purpose of the inspection described in subsection (g) of this section is to:
  - betermine whether the underground storage tank complies with the applicable standards of Article 3 or Article 4 of this subchapter.

- (2) Determine whether the operator has monitored and tested the underground storage tank as required by the permit, and
- (3) Determine whether the underground storage tank is in a sake operating condition.
- (1) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall file with the local agency a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring plan needed to achieve compliance with either Article 3 or Article 4 of this subshapter, as appropriate or the permit conditions. This plan and time schedule shall also implement all the recommendations of the special inspector. The local agency may exempt the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that the failure to implement the recommendation will not cause an unauthorized release.

#### 2703. Annual Report

(a) The local agency shall notify the State Board of any changes in permits as defined in subsections (a) or (a) Section 2702 of this Article or any unauthorized releases as defined in Article 2 annually on State Board annual report forms or other methods determined by the State Board. This information shall be submitted to the State Board by March 1 of each year overing the prior calendar year.



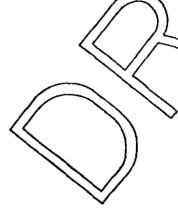
- (a) Any person providing information in an application for a permit to operate an underground storage tank, or for renewal of the permit or application for a categorical or site-specific variable, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:
  - (1) Which portions of the information submutted is actually a trade secret;
  - (2) How long this information should be treated as confidential;
  - (3) Measures that have been taken to protect this information as confidential.
  - (4) A discussion of why this information is a trade secret including references to statutery and case law as appropriate.
- (b) If the local agency on the State Board or the Regional Board determines that a request for confidentiality is clearly valid, the material will be given trade secret protection as discussed in election (f) of this section.
- (c) If the local pency or State Board or the Regional Board determines that the request for confidentiality is clearly frivilous, it will send a letter to the applicant stating that the information will

not be treated as a trade secret unless the local agency or the State Board or the Regional Board is instructed otherwise by a court within 10 days of the date of the legter.

- or the State Board or the Regional coard will inform the person claiming trade secrecy that the ourden is on him to justify the claim. The applicant will be given a fined period of time to submit such additional information as the local agency or the State Board or the Regional Board may request. The local agency or the State Board shall then evaluate the request in this basis of the definition of "trade secrets" contained in Health and Safety Code Section 25283.6(a) and Issue its decision. If the local agency or the State Board or the Regional Board determines that the information is not a trade secret, it will send a letter to the applicant stating that the local agency or the State Board of Regional Board will treat the information as such unless the local agency or the State Board of Regional Board will treat the information as such unless the local agency or the State Board of Regional Board will treat the information as such unless the
- (e) All information received for which trade secrecy status is requested shall be treated as confidential until a final determination is made as discussed in subsection (f) of this section.
- (f) Information which has been found to be confidential, or regarding which a final determination has not been made, shall be immediately filed in a separate "confidential" file. If a document or portion

of a document is filed in a confidential file, a notation should be filed with the remainder of the document indicating that forther information is in the confidential file.

- (g) Information contained in confidential files shall only be disclosed to authorised representatives or other governmental agencies only in connection with the State Board's, the Regional Board's or local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code.
- (h) Nothing contained herein shall limit an applicant a right to obtain prevention of disclosure of information pursuant to other provisions of law.



3. Draft regulations dated August 13, 1984

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#### Article 1. General

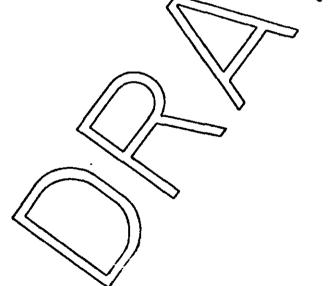
Adopt new section to read:

2610. Applicability

- (a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous substances from underground talks.

  These regulations establish construction standards for new tanks; establish uniform standards for release reporting, repair, and object requirements; and specify variance request procedures.
- (b) Persons who,own one or more underground tanks storing hazardous substances shall comply with these regulations except as provided in Section 2611 of this Article. If the operator of the tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to: monitor the tank maintain appropriate records; implement reporting procedures as required by the permit; and properly close the tank as required by the permit.
- (c) Counties shall implement the regulations in this subchapter within both the incorporated and unincorporated areas of the County without modification except as provided in Section 2011(g) of this Article or Article 8 of this subchapter, through the resulting of permits to underground tank owners. A permit may be issued for each underground tank, several tanks or for a facility. A city may, by ordinance, assume the responsibility for implementing the provisions of this subchapter within its boundaries.
- (d) All owners of boolegy and tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new tanks) or

the monitoring standards of Article 4 (existing tanks) of this subchapter. However, owners of existing underground tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued permits pursuant to those standards in lieu of the standards of Article 4 of this subchapter. In addition, all owners and/or operators of underground tanks subject to this subchapter must comply with the release reporting requirements of Article 5, the repair requirements of Article 5, the repair requirements of Article 7, and the permit application requirements of Article 10.



# <u>\*\*</u> \*

Adopt new section to read:

## 2611. Exemptions

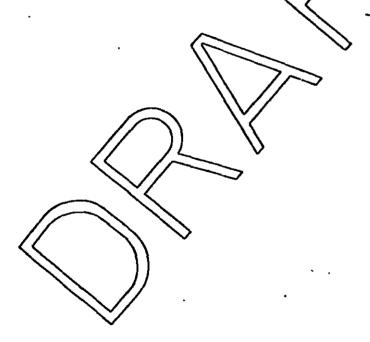
- (a) The commers of underground storage tanks that meet any of the following conditions shall be exempt from the provisions of this subchapter.
  - (1) Underground storage tanks that are located within the jurisdictions of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, meets the requirements of Article 3 and Article 4 of this subchapter or implements the requirements of Health and Safety Code Sections 25284 and 25884 1 provided that:
    - (A) The ordinance, as it may be amended, continues to most at a minimum the requirements of Article 3 and Article 4 of this subshapter or implements the requirements of Wealth and Enfety Code Sections 25284 and 25284.1; and
    - (B) The county or city issues permits for underground tanks pursuant to the ordinance by submits a copy of the termit application to the State Board of specific in Article 10 of this subchapter.
    - (C) The country or city submits information on all unauthorized releases as epocified in Article 5 of this subchapter.
    - to the county or city submits information on any permit charges or seconds as specified in Section 2703 of Article 10 of this subchapter.
  - (2) Underground storage tanks that are used for the storage of hazardous substances used for the control of external parasites of cattle a.xi subject to the supervision of the county agricultural commissioner if the

county agricultural commissioner determines, by inspection prior to use, that the tank provides a level of projection equivalent to that required by Section 25284 of the Health and Safety Code, if the tank was installed after June 30, 1984, or protection equivalent to that provided by Section 25284.1 of the Health and Safety Code if the tank was installed on or before June 30, 1984.

- (i) Underground storage tanks that are received on a farm and only store motor vehicle fuel which is used only to propel vehicles used primarily for agricultural purposes. Vehicles used primarily for agricultural purposes is meant to include non-licensed vehicles and vehicles utilized in the production of agriculture at the farm site.
- (4) Underground storage tanks that are used for aviation or motor vehicle fuel storage and are located within one mile of a farm and the tank is used by a located past control operator, as defined in Section 11705 of the Four and Agricultural Code, who is primarily involved in agricultural past control activities.
- (5) Underground strange tanks containing hazardous wortes as defined in Section 18716 of the Health and Safety Code if the person owning or operating the tank has been repeat a hazardous waste facilities permit by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or usanted interpolations under Section 25200.5 of the Health and Safety Code.

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(b) Structures such as sumps, separators, storm drains, catch basins, oil field gathering lines, refinery pipelines, lagoons, evaporation ponds, yell cellars, separation sumps, lined and unlined pits, sumps and lagoons are not considered underground tanks for the purpose of these regulations. Sumps which are a part of a monitoring system required under Article 3 of this subchapter are not exempted by this section; however, these sumps would be considered part at the secondary container or leak detection system of the primary container and would be required to meet the appropriate construction criteria.



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#### Article 2. Definition of Terms

Adopt new section to read:

2620, Definitions

The following definitions shall apply to terms used in this sub

"Board" means the State Water Resources Control Board.

"Existing underground tank" means any underground tank that is not a new underground tank.

"Facility" means any one, or combination of, underground storage tanks used by a single business entity at a single location at site. -

"Hazardous substance" means all of the following liquid and solid substances on the Department of Health Services comprehensive master list which includes:

- At prepared by the Director of the 1. Substances or the Department of Industrial Relations parsuant to Section 6382 of the Labor Code
- 2. Hazardous substances as defined in Section 25316 of the MEATCH and Safety Code.

Any substance or make is which is classified by the National Fire Protection Association (NFPA) as a flammable liquid, a class II combistible liquid, or a class III-A combustible

"Installed" musts the point in time when all necessary permits have been issued allowing the implacement of the underground tank or, if no permits are necessary, the point in time when actual implacement of the tank begins.

"Local agency" means the county or city that is implementing the permit program. The local agency may also mean the Repartment within the county or city designated to implement the program.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn upon a highway, excepting a device moved exclusively by human poper or used exclusively upon stationary rails or tracks.

"Motor vehicle fuel tank" means a tank that contains a product which is intended to be used primarily to fuel motor vehicles.

"New underground tank" means any underground tank installed after the effective date of these regulations of, if prior to adoption of these regulations, installed within a county, city and county or city where the county, city and county of city has adopted an ordinance implementing the provisions of Section 25284 of the Health and Satety Code and the tank was installed after the date of adoption of said ordinance

"Operator" means the operator of an underground storage tank.

"Owner" means the owner of an underground storage tank.

Person" means an undividual, trust, firm, joint stock company, corporavincluding. government corporation, partnership, and association. also includes any city, county, district, the state, or any

department or agency thereof. "Person" includes the United States, to the extent authorized by federal law.

"Pipe" means any pipeline or system of pipelines which is used an connection with the hazardous substances and which are not intended to transport hazardous substances in interstate of intrastate commerce or to transfer hazardous materials in bulk to or from a marine vessel.

"Primary containment" means the first level of containment, such as the portion of a tank which comes into immediate contact on its inner surface with the hazardous substance being contained.

"Product-tight" means impervious to the substance which is contained, or is to be contained, so as to prevent the seconds of the substance from the primary containment. To be product tight, the tank shall not be subject to physical or chemical deterioration by the substance which it contains over the useful life of the tank.

"Secondary containment" means the level of containment external to, and separate from the primary containment.

"Single-walled" means opinitruction with wells made of only one thickness of material. For the purpose of this subchapter, laminated, coated, or clad materials shall be considered single-walled.

"Special inspectors" means a professional engineer, registered pursuant to Chapter 7 temperating with Section 6700) of Division 3 of the Business and Professions Code, who is qualified to attest, at a minimum, to

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8/13/84

Article 3. New Tank Construction and Monitoring Standards

## 2630, Applicability

- (a) This article contains statewide minimum standards for the construction, installation, and monitoring of new underground tanks that contain hazardous substances.
- (b) Sections 2631 and 2632 specify construction and monitoring standards for all new tank systems. New tank systems that only stope notor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections 2633 and 2634 in lieu of those specified in Sections 2631 and 2632, respectively. However, if the construction standards in Section 2633 are used, then the monitoring standards of Section 2634 must also be used.
- (c) All New tank systems must comply with Section 2635.

Construction Standards for New Underground Storage Tanks

- a) Primary and secondary levels of contailment shall be required for all new underground tanks used for the storage of hazardous substances as defined in Article 11.
- b) All primary containers shall be product-typic.
- c) All secondary containers shall be constructed of materials of sufficient thickness, density, and composition to contain the hazardous substance for a puriod of at least twice the maximum uniquipated time sufficient to allow detection and recovery of leakage from the primary container.
- d) The secondary container shall have the spility to contain the following volumes:
  - (1) at least 200 percent of the values of the primary container where only one primary container is within the secondary con-
  - 2) In the case of multiple primary containers within a single secondary container the secondary container shall be large enough to contain 150 percent of the volume of the largest primary container placed in it, or 10 percent of the aggregate internal volume of all primary containers in the storage facility, whichever is greater.

- (e) If the storage facility is open to rainfall, then the secondary container must be able to accommodate the volume of the twenty-four (44) hour-one hundred (100) year storm in addition to that required in Sepsections (d) and (e) of this section.
- (t) Volume requirements for a secondary container in ch consists of the pore space in backfill placed around the primary container shall be 110 percent of that required in Sections 2631(d) and (e). The available pore space in the secondary container backfill shall be determined using appropriate engineering methods.
- (g) Laminated, coated, or clad capacitate shall be considered single walled and shall not be construed to fulfill the requirements of both primary and secundary containment.
- (c) shall be considered to fulfill the columntric requirements for socondary considered to fulfill the columntric requirements for socondary containing a specified in Sections 2631(d).

- 32. Monitoring Standards for New Underground Storage Tanks
  - (a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this article.
  - (b) Secondary containers shall be equipped it a collection system depable of removing any precipitation, subsurface infiltration, or hazardous substance and liquid leakage from the primary containment.
  - (c) The floor of the secondary containment shall be constructed on a firm base and sloped to a collection sump. The sump shall be of sufficient depth and the access casing shall be of sufficient size to allow efficient removal of the collected liquid. The access casing shall be extended to the ground surface, perforated in the region of the sump, and covered with a locked waterproof cap.
  - (d) The casing shall be of sufficient thick was to withstand all anticipated applied stresses with a 15 safety factor and constructed of materials that will now be structurally weakened by the stored product for donate, capture or mask product constituents for which analyses will be made.
  - (e) The sump shall be monitored with a continuous sensor, which is removable on a semi-annual basis for calibration and maintenance if weded. The continuous sensor shall be capable of either:

- (1) Detecting within the sump 0.5 inches of standing liquid and activating a strategically-located, above-ground alarm system when any combination of a hazardous substance or water is present. All standing liquid shall be immediately sampled and analyzed within a time summified by the local agency to best detection limits to determine the presence of hazardous substances. This system cannot be used when water is normally expected to be present within the secondary contailment; or
- (2) Detecting within the sump 0.5 inches of the hezardous substance stored
  in the primary container(s) and activating a strategically-located,
  apove-ground alarm system.
- (f) The interstitial space between the walls of a double-walled tank may be monitored continuously using a pressure sensor. The sensing devices shall be capable of activating a strategically located above-ground alarm system. Double-walled tanks which trilize this leak detection system are exempt from the regularments of Sections 2632(c) through (e).

- 3. Construction Standards for New Motor Vehicle Fuel Tanks/
- (a) This section specifies alternate construction standards for new table which only contain motor vehicle fuels. This section <u>Pay</u> is utilized by permit applicants in lieu of Section 2631. If this section is used in lieu of Section 2631, then the monitoring standards specified in Section 2634 shall be used in lieu of those specified in Section 2632.
- (b) Primary containers for the underground storage of motor vehicle fuel shall consist of product-tight tanks considerated of thoughas reinforced plastic, cathodically protected steel, or steel slat with glass fibre reinforced plastic and installed in conjunction with the secondary containment system described in Section [6,110] and (e).
- (c) Primary containers used too the undergrams storage of motor vehicle fuel and constructed of materials other than those specifies in Section 263(MD) Thank he subject to the requirements of Section 2631.
- (d) The secondary container shall be demonstrated to achieve the integrity and compatibility friture of Section 2631(c) of this article.
- the response planefull preclude the contact of any leaked hazardous substance with ground water. Proof that the secondary container and response planefull protect ground waters must be demonstrated by the permit implicant to the satisfaction of the local agency. The demonstration shall consider the following:
  - (1) The volume of the secondary container;

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- (2) The depth from the bottom of the secondary container to the highest anticipated level of ground water;
- (3) The nature of the unsaturated soils under the secondary container and their ability to adsorb contaminants or allow vertical movement of contaminants; and
- (4) The nature and timing of the response plan to alean-up the hazardous substances which have been discharged from the primary container.
- operating pressure loss detector and flow restriction device are exempt from the secondary continuer requirements of the article. This detector shall be connected to a usual of audible alarm system unless it provides at 1935 a 50 percent reduction from normal flow rates.

- 4. Monitoring Standards for New Motor Vehicle Fuel Tanks
- (a) Monitoring of underground tanks used for the storage of motor vehicle fuel and constructed pursuant to the standards of Section 2633 of this article shall consist of all of the following:
  - Monitoring of the secondary containment system pursuant to subsections (b), (c) and (d) of this section.
  - (2) Daily gauging and inventory reconciliation by the operator pursuant to Section 2643 of Article 4.
  - (3) Hydrostatic testing of the tile every two years according to the criteria specified in Section 2642 of Article 4, and
  - (4) All pressure piping systems shall be monitored utilizing an of-line pressure loss detector and flow reduction device. The objector shall be connected to a visual or audible alarm system unless it provides for at least a 50 percent reduction from normal flow rates.
- (b) An access casing shall be installed at each monitoring location.

  The casing shall be:
  - (1) Capable of allowing any liquid that may be moving along the upper surface of the secondary container to enter the casing:

- (2) Of sufficient size and thickness to allow efficient removal of collected liquid and to withstand all anticipated applied stresses with a safety factor of 1.5;
- (3) Constructed of materials that will not be Structurally weakened by the stored product nor donate, capture or mask product constituents for which analyses will be made;
- (4) Screened along the entire vertical zone of permeable material which may be installed between the primary and secondary container:
- (5) Capable of precluding lunkage of any hazardous substance to areas outside of the secondary containing and
- (6) Extended to the ground seriace and covered with a locked waterproof gap
- (c) Monitority of each could described in Section 2634(b) shall utilize a continuous songer which is runovable on a somi-annual basis for calibration axis an inclusive, if needed, and capable of detectivy within the carried U.5 inches of the hazardous substance stored in the primary container(s) and activating a strategically located above-ground alarm system.

- d) An underground tank used for the storage of motor vehicle fuels that has a loss or gain of hazardous substance or water as determined by daily gauging and inventory control (as required in Subsection (a)(2) of this section) of greater than any of the following shall be tested according to the procedures specified in subsection (a) of this section:
  - (1) Daily loss or gain of 50 gallons,
  - (2) Seven [7] day loss or gain of five percent of the volume of hazardous substance delivered over the seven days, or
  - (3) Cumulative (calculated over a period of at least thirty (30) days)
    loss or gain of one-half percent of the volume of hazardous nubstance
    delivered over the period that the cumulative loss or gain is
    calculated.
- (e) If investory controls bedicate a gain or less of mazardous substances greater than that specified in subsection (c) of this section, then the following steps shall be implemented by the operator or permittee.

  The steps may be implemented sequentially if (occurrently, however, they must be completed within the specified time periods. Reporting as required in ordicle 5 of this subchapter shall be followed.
  - If completion of the steps described in subsections (2), (3), or (5) of this subsection indicate inventory reconciliation errors that, when corrected cause the levels in subsection (d) of this section not to be exceeded,

then the remainder of the steps need not be completed. If completion of the steps described in subsections (4) or (6) through (8) of this subsect reveal the source of the loss or gain, then the remainder of the steps need not be completed.

Transfer of hazardous substances into and out of the underground storage talk may continue throughout the steps provided that the steps are comple within the specified time periods and any loss or gain does not exceed two times the levels specified in subsection (d) of this section. Inventory control and daily reconciliation shall continue throughout implementation of the steps.

- (1) The operator shall notify the other verbally or in writing of the r that inventory controls undicate a gain or loss of hazardous substa or water within 24 hours of the completion of the daily reconciliation which indicates the loss or gain.
- (2) The operator shall review the inventory records within two (2) house to determine if an error exists which would cause the gain or loss be less that that specified in subsection (d) of this section.
- (3) The objector shall have performed by a qualified person a complete review of all inventory records from the last time a zero loss or the condition existed. This shall be completed within 24 hours of the conclusion of subsection (e) (2).

- (4) The readily accessible physical facilities shall be carefully inspected for leakage. This shall be completed by trained personnel within 24 hours of completion of subsection (c) (3)
- (5) All dispensor meters associated with negarious substance withdrawal shall be checked for calibration within 24 hours of completion of subsection (e) (4).
- (6) All piping shall be tested using the methods specified in Sections 4-3.6 or 4-3.7 of the National Fire Protection Association (NFPA) publication entitled "Undesground Leakage of Frammable and Combustible Liquids", 1983 (NFPA 319), within 24 hours of completion of subsection (e) (5). This the may be completed after the step described in subsection (e) (7) if exception is secessary to perform the tests and if the step described in subsection (e) (7) is completed within 48 hours of the completion of subsection (e) (5). If this occurs, then this subsection (e) (7).
  - of Article 4 within 48 hours of completion of subsection (e) (6).
- Additional tests or investigations as required by the local agency.

- (f) A response plan for an unauthorized release shall be developed prior to installation for any container which does not meet the volumetric requirements of Sections 2631(d) and (e) of this Article. The response plan shall consider the following:
  - The volume of the secondary container in relation to the volume of the primary container;
  - (2) The amount of time the secondary contains must provide containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked materials;
  - (3) The depth from the motion of the secondary container to the highest anticipated level of ground within
  - (4) The nature of the unsaturated soyls under the secondary container and their alliney to absorb contains units or allow vertical movement of populari, anti-
  - stances which have been discharged from the primary container and are located in the unsaturated soils between the primary container and are ground water including the secondary container sump.

- 2635. General Construction Standards
  - (a) The following sections apply to all primary and secondary containers.
  - (b) Primary containers and double-walled tanks shall be designed and constructed to comply with all of the following:
    - (1) A 0.25-inch thick steel wear plate (striker plate) shall be centered under all accessible openings of the underground tank. The plate shall be rolled to the contours of the tank, bonded or seam welded in place, and have a minimum area of the opening or a guide tube, whichever is smaller.
    - (2) All underground tanks shall be guaranteed by the manufacturer to be product tight prior to leaving the factory.
    - (3) Following installation, all underground tanks shall be tested either byleostarically or with pressure in accordance with standards and procedure set forth in acticle 4.
      - Cathodosily protected steel tanks and steel tanks clad with grass fibre reinforced plastic shall be fabricated and designed by the regoir ments in Underwriters Limited (UL) 58, Standards for Sheet Underground Tanks for Flammable and Combustible Liquids or the American Society of Mechanical Engineers (ASME) Pressure Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code and have/a minimum thickenss of at least 7 gauge (0.18 inch).

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- (5) Fiberglass reinforced plastic tanks shall be UL Instead and designed in accordance with UL Standard 1316, Standard for Glass-Fiber-Reinford Plastic Underground Storage or Underwriter's Laboratory of Canada, Standard ULC-5615-1977, Standard for Reinforced Plastic Underground Tarks for Petroleum Products.
- (6) Fiberglass reinforced plastic trans shall be designed based on tests by the manufacturer for surability and chemical compatability with the hazardous substances to be stored using applicable sections of ASTM D4021-81 "Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Storage Tanks", and the manufacturer shall provide the open of the citter assurance of the compatibility.
- (7) The secondary container must be capable of precluding the inflow of the highest ground water anticipated during the life of the underground storage tank into the space between the primary and secondary containers.
- (8) If the space between the primary and secondary containers is backfilled, the backfill material shall not preclude the vertical
  movement of leakage from any part of the primary container.
- (9) The secondary container shall at a minimum encompass the area within the system of vertical planes surrounding the exterior of the primary containment unit. If backfill is placed between the primary and econdary containment then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment

over the vertical distance between the primary and secondary containment. The secondary containment shall extend beyond the vertical planes an additional distance defined above equal to the radius of lateral spread plus one foot.

- (10) The secondary container and any backfill material between the primary and secondary container shall be designed and constructed to promote gravity drainage of a leak or hazardous substances from any part of the primary container to the monitoring location(s).
- (11) The original exception for the secondary container shall have a water tight cover which extends at least one (1) foot beyond each boundary of the original exception. This cover shall be asphalt, reinforced concrete, or agreement material which is sloped to drainers leading away from the exception. Manways shall be constructed as water-tight as practical. Double-walled tanks are want from this requirement.
- (c) All primary and secondary container systems shall be designed and constructed to comply with all of the following:
  - (1) Underground storage tanks shall be located outside the prism of bearing pressure from footings of existing or designed structures and's
    minimum of ten (10) feet away from these structures. Underground
    storage tanks may be located closer than ten (10) feet away from



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these structures provided a registered civil englisher reviews and approves of the design.

- (2) The actual location and orientation of the underground tasks and appurtenant piping systems shall be indicated on as-built drawings of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local puncy.
- (3) Materials that in combination may cause thre or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of a primary or secondary container shall be separated in both the primary and secondary containment so as to world potential intermixing.
- (4) Drawinge of liquid from within a pecondary container shall be controlled in a major approved by the local agency so as to prevent hazaries materials from bette discharged. The liquid shall be analyzed to determine the presence of any of the resources substance(s stored in the primary container prior to initial removal and monthly thereafter for any continuous discharge (removal) to determine the appropriate method for final disposal. The liquid shall be sampled and abouted immediately upon an indication of an inauthorized release from the primary container.
- (d) Attermary obstainers and double-walled tasks shall be installed according to the manufacturer's written recommendations or, if no written recommendations exist, best engineering practice.

- (e) All primary containers and double-wailed talks subject to floatation shall be weighted or anchored using methods speculial by the manufacturer or, if now exist, best engineering judgment.
- (f) When required by the local agency, all underground storage tanks shall be equipped with an overflow protection system which includes the following elements:
  - A level sensing device that continuous monitors and indicates the liquid level in the tank and either (2) or (3) or both,
  - (2) An audible or visual alarm system rungered by a liquid level sensor to alert the operator of an impanying overfill condition, or
  - (3) An automatic shun-off device that stops the flow of product here; degreed to the tank when the tank is full.
- (g) The overflow projection system required in subsection (f) of this section shall be satisfied for underground storage tanks containing motor vehicle focks in which:
  - (1) Both the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank, or

- (2) The available capacity of the tank to be filled is determined immediately prior to filling to be at least 110 percent of the volume of the entire tank compartment to be deliveraged as determined by tank gauging, or
- (3) The hazardous substance being delivered can be metered into the tank and the available tank capacity is determined immediately prior to filling.
- (h) All primary containers and double-walled tanks constructed of steel shall be protected by either:
  - (1) A properly installed, maintained, and morniored cathodic protection system with or without coatings or
  - (2) Corrosion rusistant materials of continuction such as special alloys or fiberglass-reinforced plastic coatings.

Selection of the type of protection to be employed shall be based on the corresion history of the area and the judgment of a registered corrosion and the property of the area and the product of a registered corrosion.

Article 4. Existing Underground Storage Tank Monitoring Criteria

Adopt new section to read:

### 2640. Applicability

- (a) All owners of existing underground storage tanks subject to this subchapter shall implement a monitoring system that complies with this
  article and is approved by the local agency. A local agency shall not
  issue a permit if the underground storage tank cannot be adequately
  monitored. To be adequate, the monitoring system must be capable of
  detecting active and historic unauthorized releases any unauthorized
  release that may occur in the future, and be capable of measuring the
  ground water quality directly. The failure to implement an approved
  monitoring system shall be cause for closure of the underground storage
  tank pursuant to exittle 7 of this subchapter.
- (b) The retent of most foring existing underground storage tanks is to detect leakage before the hazardous substance reaches ground water.

  Therefore, principal method of leak detection monitoring shall, in most cases, utilize systems other than ground water monitoring. Multiple, nonduplicative systems, as described in Sections 2641 through 2646, shall be implemented where technically and practicably feasible to tasks that do not have a secondary containment system which meets the requirements of Article 3.

- (c) The initial monitoring of all existing underground storage tanks shall, if feasible, be capable of determining if prior use of the underground storage tank has resulted in an unauthorized release. The soil sampling described in Section 2644 of this article shall be one method to meet this intent. Other methods may be approved by a local agency which achieves this intent.
- (d) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2641 of this article when feasible. If the entire underground storage tank is not susceptible to visual monitoring, but a significant portion of the underground storage tank curbs visually monitored, then that portion of the underground storage tank shall be monitored visually. Visual monitoring that can only be implemented during a portion of the year due to floating or the presence of other liquids shall be utilized during impass portions of the year when feasible. However, unless visual monitoring is implemented for the entire underground storage tank throughout the entire year, other forms of monitoring shall also be implemented.
  - All owners of existing underground storage tanks subject to this subchapter who are not able to implement visual monitoring as specified in Section 2641 of this article, shall implement each alternate monitoring method as specified in Sections 2642 through 2646 of this Article. Soils monitoring specified in Section 2644 of this article is shall not

be exempted based on the ability to implement visual manyloring unless an alternative monitoring method is approved by the local agency which meets the intent of subsection (c) of this section. If an owner demonstration the local agency that the exemption criteria should apply the owner shall be relieved of the obligation to implement soils monitoring.

- (f) Additional monitoring methods that are equivalent to or better than the methods specified in this article may be approved by a local agency pursuant to the intent of subsections (b) art (c) of this section.

  Requests for the use of additional monitoring methods shall be subject to the applicable sections of Article 8. These additional methods may, upon the discretion of the local agency, sensore the necessity to implement any or all of the alternatives described in Sections 2642 through 2646 provided that all additional monitoring objectives can be achieved with the additional methods.
- (g) All smars of unsurfroom storage tanks shall, if feasible, install a verification monitoring system which monitors ground water beneath the underground storage tank. Underground storage tank owners are exempt from this requirement of they meet the exemption criteria contained in Section 2647 of this article.
- (h) All portings and wells constructed and sampled pursuant to this article shall utilize the construction and sampling methods specified in Section 4648 of this article.

(1) All exploratory borings or soil sample collection borings that are not converted to a cased monitoring well shall be backlibled with bentonite grout or slurry.



# 2641. Visual Monitoring

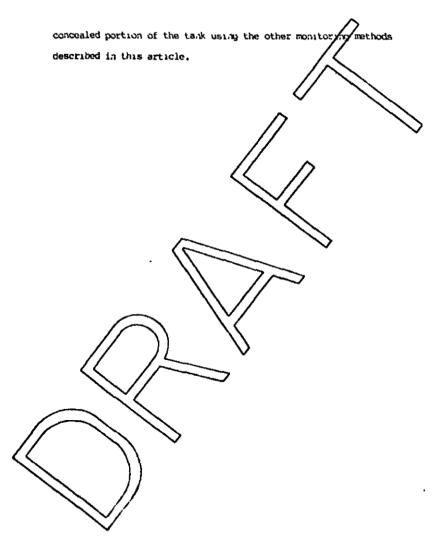
- (a) Visual monitoring shall be utilized as the principal leak detection maintoring method, where teasible, for all or a portion of the exterior surfaces of an underground storage tank. All owners of existing underground tank owners shall implement visual monitoring for any exposed portion of an underground tank unless they demonstrate to the local agency that at least one of the examples criteria of subsection (b) of this section is applicable. If visual monitoring is to be implemented, then the provisions of subsections (c) and (d) if this section shall be followed.
- (b) If any one of the following conditions are mot the owner is exempted from implementing visual monitoring:
  - (1) A lower may be exempted from resually monitoring any portion of an underground storage tank that is in contact with the ground surface, a floor or pad such that it cannot be seen. A tank in a saddle should not typically qualify for an exemption.
  - (2) If the art of visually inspecting the entire exterior of the underground storage tank would put a person in a physically unsafe covironwist.
  - (3) If a person would be required to use personal protection equipment (other than normal protective equipment, such as steel-took shoes,

hard hat, eye or ear protection, etc.) in order to visually inspect the entire exterior of the underground storage tank.

- (4) If the underground storage tank is located at a facility which is not staffed on a daily basis.
- (c) A visual monitoring program shall incorporate all of the following:
  - (1) Provisions that all accessible externol surfaces of a tank
    and the surface of the floor directly behoath the tank shall
    be monitored by direct virtual of
  - (2) A written routine monitoring procedure shall be prepared which includes: the frequency of visual inspections, the location[s] from which observerations will be made, the name(s) or title(s) of the person(s) responsible for performing the observations, and the reporting format.
    - Visual inspections shall be performed daily at a minimum, and shall be more frequent if necessary. At least one inspection shall be performed when the liquid level in the tank is at its highest. The inspection frequency shall be selected such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the hazardous substance

remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thermal being visually monitored.

- (4) Recordation and reporting of the injuid level in the tank at the time of the inspection.
- Id) The observation of any liquid on the exterior of or the surface immediately beneath the underground storage tank being visually monitored shall cause the owner properator to implement all of a portion of the following actions. The implicable actions and their timing shall be based on the site-specific situations shall be intended to determine if the observed liquid constitutes an unauthorized release; and shall be included in the permit.
  - (1) Laboratory analysis of the observed liquid.
  - (2) Testing of the underground storage tank utilizing the procedures described in Soction 2642 of this article.
  - (3) Rumoving a 1 hazardous substances from the underground storage
- (e) Visual monitoring of the exposed portion of a partially concealed tank shall not relieve an owner from implementing monitoring for the



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# 2642. Underground Storage Tank Testing

- (a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided in subsection (b) of this section, implement a testing program pursuant to subsections (c) through (d) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing an underground storage tank testing program if the, can demonstrate to the local agency that at least one of the following conditions applies:
  - (1) If visual monitoring present to Section 2641 of this article is implemented.
  - (2) If any test which meets the conditions described in subsection (c) of this ecetion cannot be performed without significant excavation.
- (c) Testing of undergrand storage tanks shall utilize a method capable of detecting a hatardous substance loss of at least 0.05 gallons per hour (sph). These methods are limited to those tests that make adjustments for all of the following, if applicables
  - (1) the presence of vapor pockets,
  - (2) thormal expansion or contraction of the hazardous substance.

- (3) temperature stratification in the tank,
- (4) evaporation,
- (5) pressure variations in the tank, and
- (6) deflection of the tank ends.
- (d) Underground storage tanks shall be tested according to the following schedule:
  - Category A: Un-clad steel tanks without corrosion protection test 10 years after installation, and yearly thereafter.
  - Category B: Corrosion resistant tanks test 15 years after installa-
  - Category C: Tasks installed with the secondary container and monitoring systems specified in Article 3 and monitored accordingly require no testing.

Common corrosion resistant tanks include: fiberglass reinforced plastic (FRP), cathodically protected steel, and FRP-clad steel tanks.

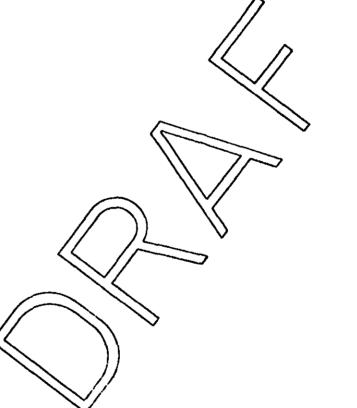
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- (e) Within thirty days of completion of the leak detection test, the underground tank owner shall provide the local agency with a report presenting the following information:
  - (1) The procedures used (including any deviations from those recommended by the manufacturer) for the leak detection method;
  - (2) The test results used in determining the commetric rate of product loss; and
  - (3) The volumetric rate of product loss.

The information shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the test procedure used.

- (f) Underground tanks which are found to lose product at a rate greater than or equal to 0.05 gph shall be repaired or replaced as specified in Articles 6 and 7, respectively.
- (g) the results of any tests performed on the tank at any other interval to determine if the tank is leaking shall be reported by the tank owner to the local agency within thirty days of completion as specified in subsection (e)(3) above.
- (h) All pressure 2 portions of an underground storage tank shall be monitored utilizing an on-line pressure loss detector and flow reduction device. The detector shall be connected to a visual or

audible alarm system. The flow reduction device shall reduce the the flow to no more than 50 percent of the minimum flow under non-pressure loss situations (i.e., normal operations).



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# 2643. Inventory Control

- (a) All owners of existing underground storage tanks subject to this subject whall, except as provided for in subsection to if this section, implement an inventory control program as described in subsections (c) through (f) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing an inventory control program is they can dumnstrate to the local
  agency that the hazardous substance is not susceptible to accepted
  technically available metering.
- control system that takes into account: daily tank quantity measurements for both Lank contents and any water layer; daily retail meter delivery records for cution of product; and daily wholesale meter delivery records for cution of product; and daily wholesale meter delivery records for incoming product; and daily wholesale meter delivery records for incoming product. Meters shall be approved for use by the County Department of Weights and Measures.
- (d) Tank quantity measurements shall be based on liquid elevation measure-
  - (1) Capable of measuring to one-eighth of an inch;
  - (2) Performed during periods of no tank additions or withdrawals;

    No performed by the tank owner, operator or other managerial personnel who maye had appropriate training;

- (4) Based on the average of two reanings if gage measurements are used;
- (5) Capable of detecting a water layer at the lowest ext of the tank, if possible;
- (6) Measured at the center of the longitudinal axis of the tank it access is available or measured at the lowest end of the tank with initial measurements at both ends, it possible, to determine if any tank tilt exists and, it so, its againtude; and
- (7) Converted to volume measurements based on a calibration chart provided by the tank manufacturer or supplier. This chart shall, if possible, take into account the actual tilt of the tank as determined initially as described in a tasestion (6) above.
- (e) Wholesale meter delivery records shall be verified according to the following procedure which utilized the criteria described in subsection (d) of this section:
  - (1) Prior to any delivery, the wolume of actual tank contents shall be determined and, if product is to be removed from the tank during delivery, the retail meter totalizer reading(s) shall be recorded.
  - (2) Following a delivery, the volume of the actual tank contents shall be determined and, if product was removed from the tank during the delivery, the retail motor totalizer reading(s) shall be recorded.

- (3) Based on the above readings, a determination shall be made of the increase or decrease in the volume of water in the tank and the increase in the volume of product in the tank. This figure shall be compared with the metered volume of the product Julivery.
- (4) A difference of more than the lessor of one-half percent of the delivery volume or 50 gallons shall be cause for a reevaluation of the measurements. This reevaluation shall initially include collection of the information required in subsection (e.'2) of this section.
- (f) Underground tanks used for records of motor vehicle fuels that have a loss or gain of product or water as determined by daily gauging and inventory control of greater than any of the following shall be evaluated according to the methods and time schedules provided for in subsection (f) of Section 2544 of Atticle 3.
  - (1) Daily loss or gan of 50 gallons, or
  - (2) Seven (1) day loss'or gain of five percent of the volume of motor weblate fuel delivered over the seven days, or
  - (3) Cumulative calculated over a period of at least thirty (30) days) loss or gain of one-half percent of the volume of motor vehicle fuel delivered over the period that the cumulative loss or yain is calculated.

- 44. Soil Testing and Exploratory Boring
- (a) Except for those tanks that have been granted an exception under subsection (b) of this section, all owners of existing underground storage tanks subject to this subchapter shall implement an evaluation as described in subsections (c) through (r) of this section to determine if prior usage of the underground storage tank has resulted in an unauthorized release.
- (b) Exemptions to soil testing at specific indoground storage tank locations may be granted by the local agency if any of the following situations exist and if they are confirmed by the local agency:
  - (1) Proximity to physical obstacles prevent the positioning and operation of drilling equipment within a horizontal distance of 15 feet from the tank
  - (2) Soll conditions prevent drilling by any generally existing
- (c) At least one stant boring shall be drilled as close as possible to the tank and shall be directed so as to intercept a point that has been projected vertically downward from the midpoint of the tank and is 50 feet below the invert of the tank. If slant drilling and soils collection is not possible, then vertical borings pursuant to suggestion (d) of this section shall be drilled.
- (d) At those sites where slant drilling is precluded but vertical drilling is feasible, at least one vertical boring shall be drilled on each

long dimensional side of the tank. The borings shall be located within 10 feet of the tank opposite the midpoint of the long dimension of the tank and shall be drilled to a depth of an least 50 feet below the invert of the tank. Soil samples shall be obtained in adoptdance with Subsection (e) of this section.

- (e) Soil samples shall be obtained from the boring(s) according to the following procedures:
  - (1) Undisturbed soil samples shall be obtained at vertical intervals no greater than 5 feet beginning at the ground surface and proceeding to the range depth of the boring of to the ground water level in but we encountering ground water, which ever occurs liest.
  - (2) The soil samples shall be collected, transported, stored, and disjurged according to approved EPA methods.
  - (3) Applysis of the introduct soil samples shall be as to lows:
    - the same depth from each boring may be composited 'if nallytically possible without loss of constituents; prior to implyies.
    - (B) Samples may be analyzed in any order of depth. If levels of imprardous substances known or suspected to be contained in the underground storage tank are detected (above background if the constituent occurs naturally at the

site) then further soils analysis is not becomesty pursuant to this subsection. However, the following diditional actions will be required:

- from the underground storage tank and further detailed investigations would be needed to prove otherwise. The underground storage yank must be clearly demonstrated to not be the source of the hazardous substances (wastes) found or have been properly repaired since the unauthorized release occurred and must be capable of being adequately monitored with the hazardous substance already in the environment before a permit oail to issued.
- (11) Further investigation will be needed to determine the magnitude and extend of any still or ground water contain untion due to the unauthorized release. This may involve, but is not limited to, analysis of the remaining soil samples and/or ground water sampling and analysis.
- Samples shall be analyzed for one or more constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then analysis shall be for at least one constituent from each period of use. If the stored hazardous substance is known to degrade or transform to other constituents in

the soil environment, then analysis shall include these degradation and/or transformation constituents.

- (4) All bornings shall be logged in detail and the soils described according to the Unified Soils Classification System by a registered civil engineer or registered geologist competent in soils engineering or a certified symmetring geologist.
- (5) All wet zones above the free water zone shall be noted and accurately logged.
- (f) It soils analysis indicates that an unauthorized release has occurred the permittee shall report the release possuant to Article 5 of this subchapter and shall repair or blandon the underground storage tank pursuant to Articles 6 or 7 of this subchapter.
- (g) If evidence of an unauthorized release is not detected, a leak detection monitoring system shall be installed pursuant to Section 2645 or 1646 and a verification monitoring system shall be installed according to Section 2647.

- 45. Vadose Zone Detection Monitoring
- (a) All owners of existing underground tanks subject to this subchapter shall, except as provided in subsection (b) of this section implement a vadose zone detection monitoring system pursuant to subsections (c) through (h) of this section.
- (b) Owners of existing underground storage tanks are exempted from implementing a vadose zone monitoring if they can demonstrate to the local agency that at least one of the following conditions apply:
  - (1) Proximity to physical obstacles prevent the positioning and operation of drilling equipment, including hand equipment if suitable, within a horizontal distance of 15 feet from the underground storage tank
  - (2) Ground water is periodically above a point 5 feet below the invert of the underground storage tank and vadose zone monitoring is not possible due to the characteristics (e.g., nonvolatility) of the basardous substance(s) stored. (Vapor monitoring is required when possible to complement leak detection ground water monitoring as described in Section 2646 of this article.)
  - (3) Vadose zone monitoring is not required if the hazardous substance(s) being stored is not susceptible to detection by vadose zone manitoring methods.
  - (4) Visual monitoring of the entire tank pursuant to Section 2641 of this article has been implemented.

- (c) Vadous some maintering may consist of value maintering of coll-pore liquid maintering or a combination of both methods.
- (d) The number, location, and depths of vadose zone monitoring points shall be selected so as to give the earliest possible warning of an unauthorized release from the underground sprage tank.
- (e) Subsurface systems shall be located within the backfill surrounding the tank if at all possible.
- (1) Vapor monitoring for underground storage tanks may be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible is defection:
  - (1) Defore any method of Vener monitoring is supproved for a specific site, it shall be domonstrated by an actual on site domonstration, using all appropriate tracer substance, that vapor would actually be aspected by the installed system.
  - (2) The builth at which each season is placed relative to the tank shall be determined according to the most probable movement of vapur through the backfill or surrounding soil.
  - (3) Vapor multipring wells placed in the backfill shall be constructed so that any leakage that may poid at the horizontal interface between the backfill and natural soils can be detected in the legistry.

- g) Soil-pore liquid monitoring of the vactore zone may be approved if the discharger can clearly show that:
  - The stored substance is susceptible to depend on by the proposed technique.
  - (2) The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable.
  - (3) The site and soil characteristics will be provent detection of an unauthorized release using a soil-pore liquid monitoring system.
  - (4) The proposed technique will be exceptive in providing early detection of tank leakage.
- (h) Vadose zo a pointoring shall be continuous where feasible and connected to an above-ground planmingstem. Where continuous monitoring is unfeasible, monitoring shall be performed weekly.

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2646. Ground Water Leak Detection Monitoring

- (a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided for in subsection to) of this section, implement a ground water leak detection monitoring system pursuant to subsections (c) through (f) of this section.
- (b) Owners of existing underground storage Eanks are exempted from implementing a ground water leak detection mountainly system if they can demonstrate to the local agency that at least one of the following conditions apply:
  - (1) Visual monitoring of the entire tank pursuant to Section 2641 of this article has been implemented.
  - (2) A vadose monitoring system pursuant to Section 2645 of this article negligible implemental and ground water is and will remain at least 5 feet below the invest of the underground storage tank.
  - (3) To proximity to physical obstacles prevent the positioning and operation of drilling equipment within a horizontal distance of 50 feet from the tank.
  - (4) Soil conditions prevent drilling by any generally existing technique.
- (c) At boose sites at which vadose zone monitoring is feasible and the ground water level fluctuates above and below a point 5 feet below the tank invert, a combination of ground water monitoring and vadose

monitoring shall be used. The ground water monitoring wells shall extend 20 feet below the lowest anticipated ground water level in order to provide assurance monitoring pursuant to Seption 2641 docing periods of low ground water.

- (d) When the ground water level is continuously above a point 5 feet below the tank invert, ground water monitoring shall be used as the principal leak detection technique, and vapor monitoring will also be used in conjunction with ground water monitoring whenever possible.
- (e) The principal ground water monitoring network whall be designed and constructed according to the following criteria:
  - the underground storage tank of facility at spacings of 1200 of arc around the central bold of the underground storage tank or facility. Additional borings shall be installed at closer angular spacings if the straight line distance between wells exceeds 30 feet. If it can be demonstrated that the radii of influence of fewer monitoring wells overlap and that the entire area of the underground storage tank or facility is under the influence of at least one well under all anticipated hydraulic conditions, fewer wells may suffice. All wells should be located as close as possible to the underground storage tank or the perhapter of the facility.

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- (2) One of the three wells shall be located such that it represents the best estimate of the downgradient direction.
- packed water wells with a minimum 4-inch inside diameter (ID) casing and in accordance with the provisions of Section 2648.
- (4) All wells shall be provided with a minimum sonface seal to prevent infiltration of surface water but the seal shall extend to a depth of at least 5 feet.
- (5) Munitoring wells at which the ground water elevation is above the base of the surface seal shall be sized and equipped with a pump capable of drawing the ground rater level down to an elevation 10 test below the base of the surface seal.
- (6) The ground water monitoring walls shall extend to an elevation that is at least it feet below the tank invert and shall be purificulted from the base of the surface small to the bottom of the wall.
- (f) Ground water shall be monitored at least once per week from each well. More inchrint monitoring may be required by the local agency.

  Sampling and analysis, if applicable shall be according to Section 26% of this article.

- :647. Assurance Ground Water Monitoring
  - (a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided in submostion (b) of this section, implement an assurance ground water monitoring system pursuant to subsections (c) through (g) of this section.
  - (b) Owners of existing underground storage tanks are exampted from implementing an assurance ground vatur monitoring system if they can demonstrate to the local agency that at least one of the following conditions apply:
    - (1) Ground water monatoring pursuant to Section 2046 of this article is used as the primary means of Peak Autoction.
    - (2) The highest ground water level possible during the life of the facility is at a depth greater than 200 feet.
    - (3) Proximity to physical obstacles prevents the position of and operation of the drilling equipment within a horizontal distance of 500 feet of the tank or tank cluster perimeter.
    - (4) Solve conditions prevent drilling by any generally existing technique.
  - according to the following criteria:
    - At those underground tank facilities at which the highest anticipated ground water elevation is between a depth of 5 feet

below the tank invert and a point 100 feet below the ground surface, a ground water monitoring system as despribed in Section 2646(e), subsections (1) through (5) of this article shall be installed. The wells shall extend to the base of the aquifur or to a depth of 100 feet, whichever is lessor and shall be perforated from 10 feet above the highest anticipated ground water elevation to the bottom of the well.

- (2) At those underground tank facilities at which the highest anticipated ground water elevation is between 100 feet and 200 feet, at least one manitoring well small be installed at a location that is as close as possible to the tank and represents the best estimate of the downgradient direction. The well shall extend to the base of the aquifer or to a depth of 200 feet, whichever is lessor, and shall be possessed from 10 feet above the highest anticipated groups pater elevation to the bottom of the well.
- (d) In order to implement subsection (c) of this section, the depth to ground water must be accurately determined. This shall be accomplished either by accumentation of the ground water elevation in all, but not less than three existing wells within 500 feet of the facility or an exploratory borkyl constructed as follows:
  - one exploratory boring shall be drilled in the anticipated downgraphest direction from the underground storage tank. More than one exploratory boring may be required where geohydrologic conditions

are complex or where more than one boring is needed to adequately cover a facility that occupies a large area.

- 2) The exploratory boring may be of any diameter capable of allowing the detection of first water and the recovery of undisturbed soil samples.
- 3) The exploratory boring shall be drilled by a dry drilling technique that permits the detection of wet zones and first water.
- . (4) The exploratory boring shall be within 10 feet of the tank. If physical constraints precise drilling within 10 feet of the tank, the boring shall be drilled as near as possible to the tank, but no further than 50 feet from the tank.
  - (5) The exploratory porting shall be writted to a minimum depth of 200 feet of ground water is not encountered at a depth of less than 200 feet.
  - (6) If ground water is encountered within a depth of 200 feet in addition to the requirements of subsection (c) of this section, the following shall also apply:
    - (A) The exploratory boring shall be modified if necessary, and constructed as a gravel-packed water well with a minimum then II casing.
    - (B) In the case of unconfined ground water aquifers, the exploratory well shall extend a minimum of 20 feet below the ground water

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surface or 20 teet below the lowest known historical ground water level in the area, whichever is lowest. The well shall be perforated from the tank bottom elevation to 20 feet below the ground water surface or the lowest known tistorical ground water level in the area, whichever is lowest.

- (C) In the case of confined aquifers, the well shall extend to the bottom of the aquifer and shall be perforated from the top of the aquifer to the bottom of the well.
- (7) If the exploratory boring does not encounter ground water within a dripth of 200 feet, The captoratory boring map 1 be backfilled and scaled with bentante group of slurry.
- (e) Wells shall be sampled semi-annually sta minimum. More frequent sampling may be required by the local agency. Samples shall be taken after sufficient volumes of vater have been removed from the well such that pH, temperature and conductivity are stabilized.

  Sampling equipment shall not denote, capture, mask or after the sample constituents.

Analysis shall be performed for all constituents stored in the underground storage bank and their degradation or transformation products.

(g) implies shall be collected, stored, transported, and analyzed according to approved EFA methods.

- 648. Well Construction and Sampling Methods
  - (a) The sampling equipment and materials used to construct a well shall be compatible with the stored product and shall not doubte, capture, nor mask-product constituents for which analyses will be make.
  - (b) All imported materials used to gravel pack or backfill wells and to form seals shall be tested to determine their acceptability with regard to subsection (a) of this section.
  - (c) All drilling tools shall be cleaned immediately before a boring is started and immediately after a boring is completed.
  - (d) All well casings, casks fittings, sergens, gravel packs and all other components are to be thososphly cleaned before installation in the boring.
  - e) All soil and water samplers shall be cleaned before each sample is taken.
- (f) Driving fluid additives shall be limited to inorganic, non-hazardous materials which conform to the provisions of subsection (a) of this section. All additives used and the depth in which they were used are to be precisely recorded in the boring log.
- (g) Samples of additives, coment, bentonite, and grouts shall be analyzed for contaminating or interioring constituents.
- (h) All casings shall have a bottom cap or plug.
- (i) All wells shall have a surface seal. Ground water monitoring wells shall be sealed from the ground surface to the top of the perforations.

The depth of surface seals for vapor wells shall be the minimum necessary to prevent infiltration of surface water but shall not be less than 5 feet deep.

- (j) All ground water monitoring wells shall be properly developed.
- (k) Well heads shall be provided with a looking water tight cap.
- (1) Well heads shall be enclosed in a surface security structure that will protect the well from the entry of surface water, accidental damage, unauthorized access and vandalism.
- (m) Pertinent well information including well identification, well type, depths, boring and casing drameters, and perforated depths shall be permanently afixed to the interior of the surface security structure and the well identification number and well type shall be afixed on the exterior of the surface security structure.
- (n) Initial borings or wells to determine the depth to ground water shall be capable of allowing the collection of undisturbed soil samples and shall utilize a dry drilling technique that permits the detection of wet zones and first water.

Article 5. Release Reporting Requirements Adopt new section to read:

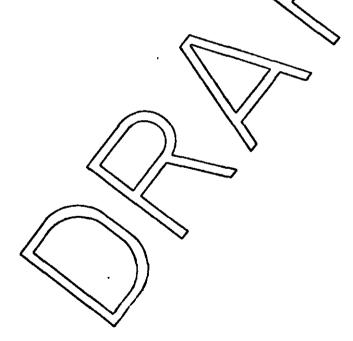
### 2650. Applicability

- (a) All unauthorized releases from the primary or secondary container must meet the reporting, clean-up and disposal requirements of this section.
- (b) All unauthorized releases shall be reported. The nature and timing of the reporting is divided into two groups depending on the threat to contaminate soil and water as a result of the release. This article describes the various reporting requirements and actions which must be implemented by the owner or permittee and the local agency.
- (c) Unauthorized releases requiring only instial recording with reporting completed as part of the normal operating reports are defined in Section 2651 of this article.
- (d) Unauthorized releases requiring immediate reporting are defined in Section 2652 of this article.

- 1. Unauthorized Release Requiring Recording
  - (a) A recordable unauthorized release is any unauthorized release of a hazardous substance which meets all the following criteria:
    - (1) The hazardous substance released to from the primary container.
    - (2) The hazardous substance released does not escape from the secondary container or cause any deterioration of the secondary container.
    - (3) The hazardous substance released can be bleaned up within eight hours.
    - (4) The hazardous substance released dons not increase the hazard of fire or explosion.
- (b) All recordable unotherized releases shall be contained and the released hazardous substance shall be safety transported and legally disposed of in an appropriate passer by the permittee. Such an occurrence shall be reported in the permittee's monitoring reports as required in the parmit and shall include:
  - (1) List of type, quantities and concentration of hazardous substance released
    - Method of clean-up and cost.
  - (3) Mabbo and location of disposal of the released hazardous substances (include copy of hazardous waste manifest(s) if utilized).

- (4) Method of future leak prevention or repair. If this involves a change as defined in Article 10, Section 2702, Subsection (a) of this subchapter, then appropriate reports pursuant to that article shall also be filed.
- (5) If the primary container is to continue to be used; then a description of how the monitoring system between the primary and secondary container has been re-activated.
- (6) Facility operator's name and telephone Mumber.
- (c) The local agency shall review the information submitted pursuant to Subsection (b) of this soction and the permit and may inspect the underground storage tank pursuant to the provisions of Article 10. Section 2702, Subsection (g) of this subchapter. The local agency shall find that the containment and monitoring shandards of Article 3 of this subchapter can continue to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow compliance with the standards.
- (d) Deturnstation of the secondary container is likely when any of the following conditions exist:
  - (1) The secondary container will have some loss of integrity due to contact with the stored hazardous substance; or
  - (2) The muchanical means used to clean-up the released hazardous substance could damage the secondary container; or

- (3) Hazardous substances, other than those stored in the irimary container are added to the secondary container for treatment or neutralization of the released hazardous substance as part of the clean-up process.
- ) If a recordable unauthorized release becomes a reportable unauthorized leak due to initially unanticipated facts, the release shall immediately be treated as a reportable release parament to Section 2652 of this article.



2052. Unauthorized Releases Requiring Immediate Reporting

- (a) All unauthorized releases which are described by cither Subsection (1) or (2) of this subsection shall be reported as specified by Subsection (b) of this section. In addition the requirements of Subsections (c), (d) and (e) of this section shall be followed.
  - (1) A reportable unauthorized release of hazardous substance which meets any of the following criteria:
    - (A) The released hazardous substance escales from the secondary container assuming that a secondary container exists.
    - (B) The released hazardous substance increases the hazard of fire or explosion.
    - (C) The released hazardous substance causes any deterioration of the suppliery container.
    - An unauthorized release of a hazardous substance that occurs from an unauthorized raleases from pressurized piping which is monitored by a pressure loss detector as described in Article 3, Section 2933, Subsection (f) of this subchapter.

- (b) All unauthorized releases meeting the criteria of Subsection (a) of this section shall be reported within 24 hours after the release has been detected or should have been detected. The operator or permittee shall notify the local agency, Office of Emergency Services and the Regional Water Quality Control Board.
- (c) Within five working days of the occurrence, the operator or permittee shall submit to the local agency a full written report to include:
  - (1) List of type, quantity and concentration of bazardous substances released.
  - (2) The results of all investigations completed at that time to determine the extent of soil or ground water or surface water contamination due to the release.
  - (3) Method of clear up implemented to-date and cost and proposed clear up actions.
  - (4) Mothod and location of disposal of the released hazardous substance and any contaminated soils or groundwater or surface water (include copy of hazardous waste manifest(s) if utilized).

- (5) Proposed method of repair or replacement of the primary and secondary containers. If this involves a change as defined in Subsection 2702(a) of Article 10, then appropriate reports pursuant to that article shall also be filed.
- (6) Facility operator's name and telephope number.
- (d) Until clean-up is complete the operator or permittee shall submit reports every three months or at a more frequent interval specified by the local agency or Regional Board to the local agency and the Regional Board. The reports Shall include the information requested in Subsections (c)(2), (c)(A) and (c)(4) of this section.
- (e) The local agency shall review the permit whenever there has been an unauthorized release of when it determines that the underground storage tank is unsafe. In determining whether to modify or terminate the permit the local agency shall consider the age of the tank, the methods of containment the methods of monitoring, the feasibility of any required repairs the concentration of the hazardous substances stored in the tank, the severity of potential unauthorized releases, and the suitability of any other long-term preventive measures.
- (f) The reporting requirements of this section are in addition to any reporting regularements specified by other laws and regulations.

g) The local agency, Regional Poard, and Department of Health Services or other governmental agency may, pursuant to other laws ar regulations, request the permitte to investigate the extent of soil, grouphwater or surface water contamination that resulted from the unauthorized release and to implement appropriate remedial action.





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## Article 6. Allowable Repairs

# 2660. Applicability:

- (a) This article describes the conditions which must be met to allow primary container repairs, to allow the use of interior costing of hazardous substance storage tanks in order to repair the tank, the required repair methodology and the required tank testing following repair.
- (b) Section 2661 lists the required evaluations which must be completed in order to allow the repurs of a primary container. A satisfactory demonstration of each part of Section 2661 shall be made prior to approval by the local agency of the reput process.
- (c) Section 2662 descripts the required methodology which must be utilized in the interior coating repair process.
- (d) Section 266 light the required primary container monitoring which shall be implemented by amendment of the permit by the focal against following primary container repair. Subsections (a) and (b) describe the monitoring which shall be performed prior to placing the underground storage tank back in service.

## '661. Repair Evaluation

- (a) The evaluations described in Subsections (h) through (d) of this section must be completed before a primary container repair can be allowed. Failure to adequately reponstrate that the repaired primary container will provide containment based on the evaluations described below stall be adequate rationale for a local agency to deny the proposed repair.
- (b) It shall be determined if the failure mechanism is isolated to
  the actual failure or is affecting other areas of the tank or if
  any other failure mechanism is affecting the primary container.
- (c) If interior Timing is the projected repair method, a demonstration that the actual failure may not have resulted from any one or more of the following conditions shall be made:
  - (1) a linear split of more than three (3) inches;
  - (2) a signic hole with a diameter of greater than one (1) inch; or
  - (3) more than ten (10) small perforations.

- (d) If interior lining or plate replacement of a steel tank is the proposed repair method, then it shall be demonstrated to the satisfaction of the local agency based on an ultrasonic of corparable test that a serious corrosion problem does not exist. It a serious corrosion problem exists, an interior lining repair may be allowed if it can be demonstrated that new or additional corrosion protection will significantly number the corrosion and that the existing corrosion problem does not inheaten the structural integrity or containment ability of the tank.
- (e) If interior lining is the proposed repair method, then it shall be demonstrated that the primary combanier has hever been repaired using an interior lining.

- ?. Repair Methodology
- (a) If a tank repair is approved based on satisfactory demonstration of the issues raised in Section 2661, then the repair must be accomplished according to the applicable subsections of this section.
- (b) If interior coating is the method of coars the material used in the repair shall be applied in accordance with nationally recognized engineering practices. An example of such a practice is the American Petroleum Institute's recommended practice No. 1631.
- (c) The repair material and any admessives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to scotact with the hazardous substance being stored.

2663. Primary Container Monitoring

- (a) After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the standard installation tests specified in Section 2-7.3 of the Planmable and Combustible Liquids Code adopted by the National Page Protection Association on November 20, 1981 (NPPA 30-1981).
- the adequacy of the repair. The testing shall be accomplished

  using procedurer described in the applicable sections of ANSI Hill,

  American National Standard Code of Pressure Piping or National Fire

  Protection Association Flammable and Combustible Liquids Code

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### Article 7. Closure Requirements

### 2670. Applicability

- (a) This article defines temporary and permanent classice and describes the nature of activities which must be accomplished in order to protect water quality in each of these significant.
- (b) The temporary closure requirements of Section 2671 shall apply to those underground storage tanks in which the storage of hazard materials has ceased but where the tank owner or operator proposes to retain the shilly to use the tank within two years for the storage of hazardous materials. Section 2671 does not apply to tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous material consistent with permit conditions.
- (c) The permanent closure requirements of Section 2672 shall apply
  to those underground storage tanks on which the storage of hazardous
  materials has coassed and where the owner or operator has no intent
  within the next two years to use the underground storage tank for
  the storage of hazardous materials.
- d) The requirements of this article do not apply to those underground storage tanks in which hazardous materials are continued to be stored even though there is no use being made of the stored material. In bodge cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

- (e) During the period of time between cessation of waste storage and actual completion of underground storage tank clasure pursuant to Sections 2671 or 2672 the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall contains to apply.
- (f) At least 45 days prior to dessation of storage of hazardous materials, unless such dessation occurs as a rought of an unauthorized release or in order to prevent an unauthorized release or minimize its effect, the underground storage tank owner shall submit to the local agency a proposal describing how the owner spends to comply with Section 2671 or 2672 of this article as appropriate.
- (g) Underground storage tanks that have eigerienced an unauthorized release do not qualify for temposary closure pursuant to Section 2671 of this article until the tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made that would article the underground storage tank to be capable of Storing hazardous materials pursuant to the permit issued by the local spancy.
- Underground stokage tanks that have experienced an unauthorized release and that cannot be repaired by authorized methods must be permanently classed pursuant to requirements of Section 2672 of this subchapter.

2671. Temporary Closure

- (a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator proposes to retain the ability to use the underground storage tank within the years for the storage of hazardous substances.
- (b) The owner or operator shall comply with all of the following:
  - (1) All residual liquid, solids of bludges should be removed and handled as follows:
    - (A) product legally stored for future before handled as a hazardous water
    - (B) hazardous waste legally recycled or disposed of as a hazardous waste.
  - (2) If the Anderground storage that contained a hazardous substance that could produce flammable valors at standard temperature and pressure, that the underground storage tank, either in part or as a whyle, shall be completely purged of the flammable valors.
  - (3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance.
  - utilizing locked caps or concrete plugs.

- (5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank except it the pump services some other equipment which is not but a closed.
- (c) All monitoring required pursuant to Article 4, except visual monitoring, shall be continued. The frequency of this monitoring may be reduced.
- (d) The underground storage tank shall be insported at least once every three months to assure that the temporary closure actions are still in place. This shall include:
  - (1) Visual inspection of all locked caps and concrete plugs.
  - (2) If locked caps are utilized, then at least one shall be removed to determine if any righted or other substances have been added to the undestround storage tank or if there has been a change in the quantity or type of liquid added gursuant to subsection [5743] of this section.

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2672. Permanent Closure Requirements

- (a) Unkerground storage tanks subject to permanent closure chall comply with either subsection (b) for tank system removal or subsection (c) for closure-in-place. It is not essential that all portions of a tank system be permanently closed in the same manner; however, all actions shall comply with the appropriate subsection. Subsection (d) regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.
- (b) Removal of underground storage tanks shall comply with subsections(1) and (2) and either subsections (3), (4), or (5) as appropriate:
  - (1) All residual liquid, polide of sludges shall be removed and handled as follows:
    - Av product legally stared for future use or handled as a hazardous waste
    - havandous waste logally recycled or disposed of as a havandous waste.
  - (2) If the underground storage tank contained a hazardous material that could produce flammable vapors at standard temperature and pressure, then the underground storage tank, either in part or as a whole, shall be completely purged of the flammable vapors.

- (3) An underground storage tank or any part of an underground storage tank that is destined for disposal shall be handled, transported and disposed of as a hazardous viste. The tank system or any part of the tank system may be handled, transported or disposed as a nonhazardous waste after it has been properly cleaned. In either case, the owner must document to the local agency that proper disposal has been completed.
- (4) An owner of an underground storage tank or any part of an underground storage tank that is destined for a specific reuse shall comply with all of the following
  - (A) Reuse shall not be inconsisted with other laws or regulations which may exist as they may relate to the nature of the hazardous material in the underground storage tank or the nature of the proposed reuse; and
  - The owner of an existing underground storage tank shall identify to the local agency the future underground storage tank owner, operator, location of use and lature of use
- (5) An owner of an underground storage tank or any part of an underground storage tank that is destined for reuse as scrap material shall comply with all of the following before the underground storage tank or any part of the underground storage tank is removed from the facility unless such removal is

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done according to the provisions of subsection (b)(4) of this section:

- (A) The tank system shall be thoroughly pleyined:
- (B) The tank system shall be cut or purctured in sufficient locations to render it obviously unfit for use;
- (C) Apply appropriate warnings to the tank
- (c) Closure of underground storage tanks in place shall comply with all of the following:
  - (1) All residual liquid, solvies, or sludges shall be removed and handled as follows:
    - (A) product legally shored for future use or handled as a hazardous waste.
    - (B) hyzardous waste legally recycled or disposed of as a hazardous waste.
  - (2) All puring associated with the tank shall be removed, handled and disposed of as a hazardous waste.
  - (3) The talk thall be completely filled with an inert solid such as sand or concrete.
    - A notice shall be placed in the doed to the property. The notice shall describe the exact vertical and areal location of the closed tank, the hazardous substances it contained and the closure method.

(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration can be based on the ongoing leak detection monitoring, verification ground water monitoring or soils sampling performed during or immediately after closure activities.

If feasible, soil samples shall be taken and applyzed according to the following:

- (1) If the underground storage tank or any portion thereof is removed then soil samples from the soils immediately beneath the removed portions shall be taken. A separate sample shall be taken for every 200 square feet or every 20 lineal feet for piping.
- (2) If the underground storage tank or any portion thereof is not removed, then souls sampling pursuant to Section 2644 of Arbicle 4 shall be implemented, if feasible.
- (3) See 13 shall be analyzed for all constituents contained 1.1

  the previously stored hazardous substances and their breakdown or transformation products.
- (e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5.

Article 8. Categorical and Site-Specific Variance Procedures

Adopt new section to read:

### 2680. Applicability

- (a) This article sets up procedures for categorical and site-specific variances from Articles 3 and 4 of this subchapter. A site-specific variance, if approved, would only apply to the specific site approved for a variance. A categorical variance, if approved, would apply to the region, area or circumstances approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific.
- (b) Section 2681 specifies the procedures that must be followed by the applicant and the State Board for categorical variance requests.
- (c) Section 2682 specific the procedures that must be followed by the applicant, local agency and the Regional Board for site-specific variance requests.

- 81. Categorical Variances
- (a) A categorical variance is an elternative method of construction or monitoring which is applicable to more than one site. Application for a categorical variance shall be made by the permittee to the State Board.
- (b) Application for a categorical variance shall be made on a state application form provided by the State March and shall include but not be limited to:
  - (1) Provision from which the variance is requested.
  - (2) Description of the proposed alternative program, method, device or process.
  - (3) Description of the region, area or circumstances under which the mariance yould apply.
  - (4) Clear and convergence will adopted protect the soil and the beneficial uses of water of the state from an unauthorized release.
  - (5) A list pocluding names and addresses of all local agencies and persons who may be affected by or may be interested in the variance request.
  - (6) A seg of \$26,000.

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- (c) The State Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.
- (d) The State Board shall complete any documents necessary to satisfy the California Environmental Quality Act Division 13; commencing with Section 21000, of the Public Resources Code).
- (e) The State Board shall romand the application to the appropriate Regional Board if it determines that the application falls within Section 2682.
- areas of the state within 180 days of receipt of a complete variance application to consider the request for a categorical variance. Notice of the hearings shall be provided at least 10 days in advance to any person who requests such notice in writing. Notice shall also be provided to all affected local agencies and to any person known to be interested in the proceedings. The notice shall specify the date, time and location of the hearing, and shall include a description of the proposed categorical variance. When the notice is mailed, it shall be placed to the mail of least 11 days in advance of the hearing.
  - All hearings shall be conducted according to the regulations governing adjudicatory procuedings which are contained in Subchapter 1.5 of this Chapter. The State Board in its discretion may require that, not later than 10 days prior to the hearing, all interested parties intending to

- participate shall submit to the State Board in writing the name of each witness who will appear, together with a statement of the qualifications of each expert witness, the subject of the proposed testimony and the estimated time required by the witness to present his direct testimony. The State Board may also require that copies of proposed exhibits be supplied to advocate parties and seven copies be supplied to the Board not later than 10 days prior to the hearing.
- (h) An applicant for a categorical variance wish domonatrate by clear and convincing evidence that the proposed alternative will adequately protect the soil and the houghtrial uses of water of the state from an unauthorized release.
- (i) The decision of the State Board will be based on that evidence and testimony in the record of the bearings. The record may be supplemented by any other evidence and testimony accepted by the State Board pursuant to the procedure outlined in Section 2066 of Subchapter 6 of this Chapter Upon the close of a wearing, the presiding officer may keep the hearing record open for a definite time, not to exceed thirty days, to allow any interested person to file additional exhibits, reports or affidavits.
  - The State Board may discuss a proposed decision in response to a request for a categorical variance at a workshop meeting. The regulations governing workshop meetings and formal disposition of State Board matters for decision which are contained in Subchapter 6 of this Chapter shall apply.



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- (k) If the State Poard grants the variance, it will prescribe the conditions the applicant must maintain and will describe the specific alternative for which the variance is being granted.
- (1) All permit applicants who intend to utilize an approved categorisal variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorisal variance to determine if the variance applies to the specific site. If the variance applies, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the State Board.
- (m) The State Board shall model or revokes categorical variance upon a fixing that the proposed alternative does not adequately protect the soil and the towaficial uses of the water of the state from an unauthorized release. The State hoard will not modify or revoke a categorical variance until it has followed procedures comparable to those outlined exercitor approval of a categorical variance.

  The State hoped shall notify all affected local agencies of the modification of the categorical variance or revoke all site permiss shich were based on the categorical variance.

## 582. Site-Specific Variances

- (a) A site-specific variance is an alternative method of construction or monitoring which would be applicable at our facility location.

  Application for a site-specific variance shall be made by the permitted to the appropriate Regional issued.
- (b) At least 60 days prior to applying to the Regional Board, the permittee shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or munitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods, or if the local agency does not act within 60 days of its receipt of the permittee's complete construction and monitoring, the permittee may proceed with a variance application.
- (c) At least 30 days prior to applying to the Regional Board, the permittee must requisit the local agency and the city, county or city and county having dark use jurisdretical over the permittee's site to join the applicant in the variance request. The local agency shall also be requested to propage any documents required by California Environmental Quality Act (Division 33, commencing with Section 21000, of the Public Resources Code)
- (d) The local age of shall have 30 days after completion of the documents or the records of the Regional Board's staff recommendation and analysis, whichever is later, to decide whether to join the applicant in the variance request.

- (e) Application for a site-specific variance shall be made on a state application form provided by the appropriate Regional Board and shall include but not be limited to:
  - (1) Provision from which the variance is requested.
  - (2) Detailed description of the complete construction and monitoring methods to be used. The proposes alternative program, method, device or process shall be clearly identified.
  - (3) Clear and convincing evidence demonstrating that:
    - (A) Due to special cucumstances not generally applicable to other property or recilities; including size, shape, design, topography, location or surroundings the strict application of Articles 3 or 4 of this subchapter would be unnecessary to enequately protect the roll and beneficial uses of the waters of the state from an unauthorized release; or
    - (B) The strict application of Articles 3 or 4 of this subchapter would create practical difficulties not generally applicable to other facilities or property.
  - (4) That the proposed alternative will adequately protect the soil and the beneficial uses of water of the state from an unauthorized release.
  - (5) Any observants necessary to satisfy the California Environmental Quality Act (Division 13, commencing with Section 21000, of the

Public Resources Code).

- (6) A fee of \$7,750.
- (f) The Regional Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.
- within 120 days after receiving a complete variance application; within 120 days after receiving a complete variance application; however, the hearing shall be held after the 30 days period described in subsection (d) of this section has expired. Notice of the meanings shall be provided at least 10 days in advance to any person who requests such notice in writing. Notice shall also be provided to all infected local agencies and to any person known to be interested in the proceedings. The notice shall specify the mate, time and location of the hearing, and shall include a description of the proposed categorical variance. When the notice is marked, it shall be placed in the mail at least 11 days in advance of the hearing.
- h) All hearings shall be conducted according to the regulations governing adjudicatory proceedings which are contained in Subchapter 1.5 of this Chapter. The Regional Board in its discretion may require that, not later than 10 days prior to the hearing, all interested parties intending to participate shall submit to the Board in writing the name of each without who will appear, together with a statement of the qualifications of each expert witness, the subject of the propose.

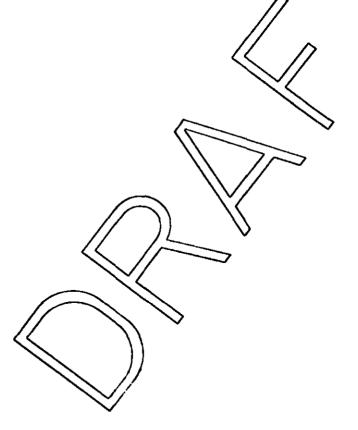
testimony and the estimated time required by the witness to present his direct testimony. The Regional Board may also require that copies of proposed exhibits be supplied to adverse parties and seven copies be supplied to the Regional Board not later than 10 days prior to the hearing.

- (1) Any variance so issued will prescribe the conditions the applicant must maintain and will describe the specific alternative system for which the variance is being granted. The hyperbal Board shall notify the applicant and the local agency of its vectors.
- (j) The Regional Board shall consider the local agency wand the city, county, or city and county's recommendations in rendering its decision.

  The Regional Board shall consider the completeness and accuracy of the information provided by the applicant in subsection (e) of this section in regional its decision.
- (k) If the vertance reject is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the Regional Good. A local agency shall not modify the permit unless it detarmines that the modification is consistent with the variance that has been granted.

The Regional Shard shall modify or revoke a variance upon a finding that the proposed alternative does not adequately protect the soil and the heighticial uses of the water of the state from an unauthorized release. The Regional Board will not modify or revoke the variance

until it has followed procedures comparable to those outlied herein for approval of a variance. The Regional Board shall popular the local agency of the modification or revocation and shall require the local agency to modify or revoke the permit for the site.



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Article 9. Local Agency Additional Standards Request Procedures

Adopt new section to read:

2690. Applicability

(a) This article sets up procedures for local advices to request State

Bourd authorization for more stringent standards than those set

by Articles 3 and 4 of the Subchapter.



. Additional Standards Request Procedures

(a) Local agency application for additional standards shall include:

(1) Description of the proposed design and construction standards.

(2) Clear and convincing evidence that the additional standards are necessary and would adequately protect the soil and beneficial uses of the waters of the state from mauthorized releases.

(3) Any documents required by the California Environmental Quality
Act (Division 13, compencing with Section 21000) of the Public
Resources Code.

(4) A fee of \$11,000.

(b) The board will confluct drampostrigation and public hearing on the proposed shallords and their need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implount additional standards. The notice and other procedural requirements contained in Sections (d) through (j) of Article 8 of this Subchapter shall apply.

- (c) The board shall make its determination whether to authorize a local agency to implement additional standards within sex months of the receipt of a complete application.
- (d) Should the board authorize the local agency to implement additional standards, the standards shall be effective as of the date the board made the determination.
- (e) Should the board not authorize the local agency to implement additional standards, the additional standards will not go into effect.
- (f) The board may modify or revoke a previously issued authorization allowing the implementation of additional standards if it finds that, based on new evidence, the additional standards are not necessary to add untely protect the soil and beneficial uses of the waters of the State from unauthorized releases. The board will not modify or revoke the authorization until it has tollowed proceduses comparable to those outlined herein for issuance of the authorization.



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Article 10. Permit Application, Annual Report and Trade Secret Application

# 2710. Applicability

- (a) This article describes specific administrative actions that must be accomplished by all tank owners, local agreeies and the State Board relative to issuing permits for underground storage tanks.
- (b) Section 2711 lists the information that must be submitted by the tank owner to the local agency as past of the permit application and the requirements for the local agency to submit the permit application to the State Board.
- (c) Section 2712 describes the conditions that local agencies must include in all permits issued and conditions local agencies must meet prior to permit issuance.
- (d) Section 2713 describes the annual senort requirements for both tank owners and local agencies.
- (e) Section File specifies conditions that must be met by a tank
  owner when respecting trade secret provisions for any information
  setmiffed to the local agency or State Board or Regional Board.

  It also specifies how the local agency, the State Board or Regional
  Board shall consider the request and how they shall maintain the
  approximation if the trade secret request is accepted.

- 11. Permit Application and Information
- (a) An application for a permit to operate an underground storage tank, or for renewal of the permit or for transfer of a permit shall be made by the owner on a torm prepared by the State Board and provided by the local agency. The local agency shall provide the Board with a copy of the completed approved application within 30 days.
- (b) The permit application shall include, but not be limited to, the following information if it is accurately known to the permit applicant:
  - (1) The name and address of the person, furn, corporation or public agency which owns the underground storage tank or tanks,
  - (2) The name, location, mailing address, phone number and type of facility where the underground storage tank is located and type of pusitiess.
  - (3) The home address and telephone numbers of the underground storage tank sperator and 24-hour emergency contact person.
  - (4) The name and telephone nukmber of the person making the application
  - The undertound storage tank description including, but not limited to, tank and auxiliary equipment manufacturer, year of manufacture, capacity, history of repairs and operation methods schedule.

10.2



- (6) The underground storage tank (tank, piping and poxiliary equipment) construction details, including, but not limited to, type and thickness of primary containment, type and thickness of secondary containment (if applicable), installation procedures and backfill, liming, prapping, and cathodic protection methods (if applicable).
- (7) A diagram or design or as-bull drawing with indicates the location of the underground storage tank (tank, piping, auxiliary equipment) with respect to buildings or other landmarks.
- (8) The description of the proposed monitoring program, including, but not limited to the following where applicable:
  - (A) VANUAL:
  - (D) tank testing or inspection procedures;
  - it inventory controls including gaging and reconciliation methods;
  - (D) Boils sampling locations and methods and analysis procedures;
  - (E) vacces zone sampling locations and methods and analysis procedures;

- (F) ground water well(s) locations, construction and completion methods, sampling and analysis procedures;
- (G) frequency and sensitivity of any monitoring method sensing instrument, or analytical method.
- (9) A list of all the substances which previously, currently or are proposed to be stored in the underground storage tank or tanks.
- (10) If the owner or operator of the underground storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the tank.
- executive officer at the level of vice-president or by an authorized representative. The representative must be reapposable for the overall operation of the facility where the tanking are located, (B) a general partner proprietor, or (C) a principal executive officer, ranking elected official or authorized representative of a public agency. The application shall be accompanied by a fee. The local agency may require a fee to cover necessary and reasonable costs of permitting and inspection of the underground storage tank. This fee shall include a surcharge determined annually by the legislature to cover the costs of State Board in carrying out its responsibilities under these requisitions.



#### 2712, Permit Conditions

- (a) As a condition of any permit to operate an undergraini storage tank, the permittee shall report to the local agency which has permitting authority at least 30 days prior to the change any changes in the usage of any underground storage tanks, including:
  - (1) the storage of new hazardous substances; or
  - (2) changes in monitoring procedures
  - (3) the replacement or repair of all or past of any underground storage tank.
- (b) As a condition of any paint to operate an underground storage tank, the permittee shall report to the local agency any unauthorized release occurrences (as defined in Article 2 within the time frame specified in Subscribers 2652(b) and (c)).
- for five years. A local agency shall not issue a permit to operate an underground storage tank until the local agency inspects the tank and determines the tank complies with the provisions of these regulations. The tank owner shall apply for renewal at least 180 days prior to the expiration of the permit.
- (d) Permits may be transferred to new tank owners if the new tank
  owner does not change any conditions of the permit and the transfer
  is registered with the local agency within 30 days of the change

in ownership by submittal of a revised permit application listing the new owner and any modifications to the information in the initial permit application due to the change in ownership local agency may review, modify or terminate the transfer of the permit to operate the underground storage tank upon receiving the transfer request.

- (e) If an underground storage tank does not completely conform with Articles 3 or 4 of this subdivision, a local agency, at its discretion, may issue a provisional permit subject to conditions specified by the local agency and providing such a permit would not be detrimental to the public's interest. The conditions shall, at a minimum, include a time schedule for upgrading the underground storage tank such that it conforms with Articles 3 or 4 of this subdivision or is closed pursuant to Article 7 of this subdivision. These time schedules shall not extend beyond the direction of the provisional permit. A provisional permit will be issued for no longer than three months and cannot be renowed or extended. The local agency shall inspect the underground storage tank persuant to the provisions of subsection (g) of this section within 15 days of the expiration of the provisional permit to assure that the permit conditions have been met.
- (f) The recal agency shall not renew an underground storage tank permit unless the underground storage tank has been inspected within the prior three years and the inspection revealed that the

underground storage tank complies with Articles 3 or 4 so applicable of this subchapter and with all existing permit complitions. The inspection shall be conducted as specified in subsection (9) of this section. If the inspection revealed noncompliance, then the local agency must verify by a follow-up inspection pursuant to subsection (g) of this section that all required perfections have been implemented.

- (g) The local agency shall inspect every underground storage tank within its jurisdiction at least once every three years. The inspection which shall evaluate the items listed in subdivision (h) of this section may be performed by the local agency or by a special inspector employed by the permit holder as required by the local agency, or both. It special inspector conducts any or all of the inspection, a copy of the special inspector's report which may contain recommendations concerning the safe storage at the same time as it is submitted to the permit holder.

  Any deficiencies or items of noncompliance found shall be addressed as described in subsection (i) of this section.
- (h) The purpose of the inspection described in subsection (g) of this section is to:
  - (1) Determine whether the underground storage tank complies with the applicable standards of Article 3 or Article 4 of this subchapter;

- (2) Determine whether the operator has monitored and tested the underground storage tank as required by the parmit; and
- (3) Determine whether the underground storage tank is in a safe operating condition.
- (i) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall file with the local agency a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring plan needed to achieve compliance with either Article 3 or Article 4 of this subchapter, as appropriate, or the permit conditions. This plan and time schedule shall also implement all the recommendations of the special inspector. The local agency may exempt the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that the failure to implement the recommendation will not cause an unauthorized release.

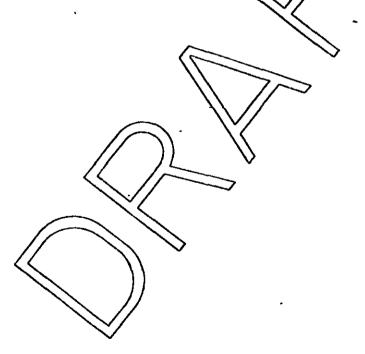
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### 2713. Amual Report

(a) The local agency shall notity the State Board of any phases in permits as defined in subsections (a) or (d). Section 2712 of this Article or any unauthorized releases as defined in Article annually on State Board annual report forms or other methods determined by the State Board. This information shall be submitted to the State Board by March 1 of each four covering the prior calendar year.



### 14. Trade Secret Provisions

- (a) Any person providing information in an application for a permit to operate an underground storage tank, or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trady-secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:
  - (1) Which portions of the information submitted is actually a trade secret;
  - (2) How long this information should be accorded as confidential:
  - (3) Measures that have been taken to protect this information as confidential.
  - (4) A discussion of the this information is a trade secret including references to statutory and case law as appropriate.
- (b) If the local agency or the State Board or the Regional Board determines that a request for confidentiality is clearly valid, the material will be given trade secret protection as discussed in subsection (f) of this section.
- (c) It the local agency or State Board or the Regional Board determines that the request for confidentiality is clearly frivilous, it will send a letter to the applicant stating that the information will

not be treated as a trade secret unless the local agence or the State Board or the Regional Board is instructed otherwise by a court within 10 days of the date of the letter.

- of the State Board or the Regional Board will inform the person claiming trade secrecy that the burden is on him to justify the claim. The applicant will be given a fixed person of time to submit such additional information as the local agency or the State Board or the Regional Board may request. The local agency or the State Board shall then evaluate the request in this basis of the definition of "tribo secrets" contained in realth and Safety Code Section 2528 (64a) and issue its decision. If the local agency or the State Board or the Regional Board determines that the information is not a brake secret, it will send a letter to the applicant stating that the local agency or the State Board or legional Board will treat the information as such unless the local agency or the State Board or legional Board will treat the information as such unless the local agency or the State Board or legional Board will treat the information as such unless the local agency or the State Board or the Regional Board is instructed otherwise by a court within 10 days of the date of the letter.
  - All information received for which trade secrecy status is requested shall be trooped as confidential until a final determination is made as discussed in subsection (f) of this section,
- (f) Intermetion which has been found to be confidential, or rejarding which a tival determination has not been made, shall be immediately tiled in a separate "confidential" file. If a document or portion

of a document is filed in a confidential file, a notation should be filed with the remainder of the document indicating that further information is in the confidential file.

- (g) Information contained in confidential files shall only be disclosed to authorized representatives or order governmental agencies only in connection with the State Bosrd's, the Pagional Board's or local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code.
- (h) Nothing contained herein shall limit an applicant's right to obtain prevention of Wiselestra of intermation pursuant to other provisions of law.

4. Draft dated November 9, 1984 - proposed regulations as modified

# UNDERGROUND TANK REGULATIONS

# CALIFORNIA ADMINISTRATIVE CODE TITLE 23 WATERS

CHAPTER 3 WATER RESOURCES CONTROL BOARD SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

PROPOSED REGULATIONS, BASED ON COMMENTS FROM THE 45-DAY COMMENT PERIOD.

(NEW TEXT IS DOUBLE-UNDERLINED; DELETED TEXT IS CROSSED OUT).

NOVEMBER 9, 1984

Article 1 General

Article 2 Definitions

Article 3 New Tank Construction and Modiforing Standard

Article 4 Existing Underground Storage Tank Monitoring Criteria

· Article 5 Release Reporting Requirements

Article 6 Allowable Repairs

Article 7 Closure Requirements

Article 8 Categorical and Site-Specific Variances

Article 9 Local Agency Additional Standards Request Procedures

Article 10 Permit Application, Annual Report and Trade Secret

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2713 Annual Report 10.1 10.2 10.5 10.9 2713 Trade Secret Provisions 10.10

Underground lank Regulations

#### Article 1. General

Adopt new section to read:

## 2610. Applicability

- (a) The regulations in this subchapter are intended to protect
  waters of the State from discharges of hazardous
  substances from underground tanks. These regulations
  establish construction standards for new tanks; establish
  separate monitoring standards for new and existing tanks;
  establish uniform standards for release reporting, repair,
  and closure requirements; and specify variance request
  procedures.
- (b) Persons who own one or more underground tanks storing
  hazardous substances small comply with these regulations
  except as provided in Saction 2611 of this Article. If
  the operator of the tank is not the owner, then the owner
  shall enter into a written contract with the operator
  required the operator to: monitor the tank; maintain
  appropriate records; implement reporting procedures as
  required by the permit; and properly close the tank as
  required by the permit.
- (c) counties shall implement the regulations in this subchapter
  within both the incorporated and unincorporated areas of

the County except as profised in Section 2513141 of this Article of Article 8 and 9 of this subshapter through the issuance of permits to underground tank owners. Fermit may be issued for each underground tank, several tanks or for a facility. A city may, by ordinance, assume the responsibility for implementing the provisions of this subchapter within its boundaries.

regulations must comply with the construction and monitoring standards of Article 3 (new tanks) or the monitoring standards of Article 4 (existing tanks) of this subchapter. However, owners of existing undergoound tanks which meet the construction and construction standards of Article 3 of this subchapter may be issues permits pursuant to those standards in lieu of the standards of Article 4 of this subchapter. In addition, all owners and/or operators of enderground tanks subject to this subchapter must comply with the release reporting requirements of Article 5, the repair requirements of Article 7, and the pepalt application requirements of Article 10.

Authority Realth and Safety Code (H&SC) 25288.2 Reference: Health and Safety Code (H&SC) 25282, 25283, 25288, 25288, 2

# 2611. Exemptions

- (a) The owners of underground storage tanks that meet any of
  the following conditions shall be exempt from the
  provisions of this subchapter:
  - Underground storage tanks that are located within the jurisdictions of counties or cities where the county or city nad, prior to January 1, 1984, adopted an ordinance which, at a minimum, meets the reddirements of Article 3 and Article 8 of this subchapter or implements the requirements of Health and Safety Code Sections 2524 and 25284.1 provided that:
    - The ordinance, as it may be amended, continues to meet, at minimum, the requirements of this subshipter or implements the requirements of Health and Safety Code Sections 25284 and 25284.1; and
    - The county or city issues permits for underground tanks pursuant to the ordinance. And submits a copy of the parall application to the State Board as specified in Artisle 19 of this subsumpter

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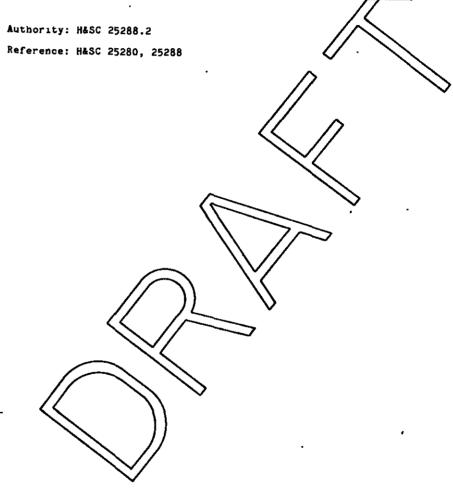
(2) 15) Underground storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety code if the person owning or operating the tank has been issued a hazardous waste facilities permit by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or strated interim status under Section 25200.5 of the Health and Safety Code.

(b) SEPRETURES SHEN AS SHERES SEPRETURES EXPEN ATSINGS ESEEN

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considered part of the accordary container or leak

detection system of the primary container and are MAMIA BE
required to meet the appropriate construction criteria.



### Article 2. Definition of Terms

Adopt new section to read:

# 2620. Applicability of Definitions

- (a) Terms used in this subchapter shall have the definitions
  provided by Section 25280 of the Health and Safety Code,
  or by Section 2621 of this Article.
- (b) The following terms are defined in Section 25280 of the Health and Safety Code:

**Board** 

Department

Facility

Hazardous substance

69al agendy

(perator

Operation 1

Person

Primary containment

Product-tight

Secondary containment

Apgle-walled

Special inspector .

Storage/store
Unauthorized release
Underground storage tank

2621. 2820/ Additional Definitions

The following definitions shall apply to terms med in this Subchapter.

PROBLET MEANS THE STATE MAKET RESOURCES CONTOL BORDER

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day

"Double-walled tank" means a container with two complete shells
which provide both primary and secondary containment. The outer
shell must provide structural support and sust be constructed
primarily of non-earthen materials including, but not limited to,
concrete, steel, and plastic.

"Existing underground tank" means any underground tank that is not a per underground bank. The term includes any underground tank which has contained a hazardous substance in the past and as of January 1, 1984 had the physical capability of being used again (i.e. it had not been removed or completely filled with an inert solid that cannot be removed, such as concrete). SUBSTANCE

Practitry? means any one; or combination of; undertround attract
starks used by a single business entity at a single location or
sixe.

THAZARABHS SUBSTANCES MEANS ALL OF THE SOLIDHING LIGHTE AND STEE
SUBSTANCES ON THE DEPARTMENT OF HEALTH SERVICES! COMPTENENTIAL
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AND DECLIPATED TO THE POINT IN TIME WHEN SII WEEGSTALS DELATING

AFRICA THE COMMEN OF CITA SERVERS AND THOU THE SECRETARY THE SERVERS THE SERVE

"Membrane liner" means any membrane sheet material fabricated into a system for secondary containment.

"Hembrane manufacturer" means the company which processes the constituent polymers into membrane sheeting from which the membrane liner is frabricated into a system for secondary containment.

"Membrane liner fabricator" means the company which converts the liner membrane sheeting into a system for segondary containment.

"Motor vehicle" means a self-propelled dealed by which any person or property may be propelled moved, or drawn. Made a Mighadat excepting a device mayed exclusively his human power of used exclusively upon stationary ratio or tracket

"Motor vehicle fuel turk" means a tank that contains a product which is intended to be used primarily to fuel motor vehicles.

"New underground tank" means any underground tank subject to this Subchapter which is installed after the effective date of this Subchapter EMESE FEGULATIONS or complies with the requirements of Article 3 of this Subchapter; or was installed after January 1,

1984 and before the effective date of this Subchapter pursuant to
a permit if prior to adoption of these regularious, installed
within a sounty, sizy and sounty or sizy where the sounty, sizy
and sounty or sizy has asopted an ordinance implementing the
provisions of Section 25284 of the Health and Safety back and the
tank was installed sizer the date of apprion of said ordinance.

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# period of feats/

"Substantially beneath the surface of the ground means that at least 10 80 percent of the surface area of the tack volume, that san be in sontact with the stored material isoludity connected piping, is below the ground surface.

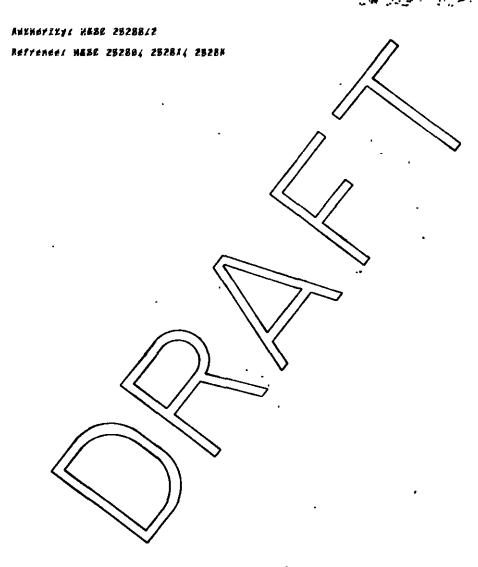
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"Unauthorized welgase" does not include intentional withdrawals
of hazardous substances for the purpose of legitimate sale, or
way, or disposal.

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Article 3. New Tank Construction and Monitoring Standards

Adopt new section to read:

2630. Applicability

- The Construction installation and monitoring of new tone control storage tanks that contain hexardous tone controls storage tanks that contain hexardous tone contain hexardous
- (b) Sections 2631 and 2632 specify construction and sonitoring standards for \$11 new underground storage tanks systems that only store motor vanicle fusis may be constructed and monitoring ourseast lower standards specified in Sections 2631 and 2634 in they of those specified in Sections 2631 and 2632, respectively. However, if the top specified in the specified standards of Section 2633 are used, then the monitoring standards of Section 2633 are used.

(c) Gll new underground storage tanks and secondary
container sans systems must comply with Section 2535.

Authority: HESC 25288.2

Reference: HASC 25280, 25284

Adout new section to read:

- 2631. Construction Standards for New underground Storage Tasks
  - ist Primary and secondary levels of containment south ac neguired for all new underpround storage tarks used for the storage of bazardous substances as defined to Buticae &.
  - ip) All primary containers shall be prepact tipet
  - (c) All secondary containers shall be constructed of materials of sufficient this woes, consity, and composition to prevent structural materials of the secondary container as a result of contact with any released becardous substance and stall be capable of containing any upsufficient release of dentain the materials for a papers of all lasts thirt for at least the maximum ability of the upsufficient to allow detection and recovery of the upsufficient to allow detection and recovery of the upsufficient release, of lease free the private free states and release.
  - id) If bezerdous substance has come into contact with the secondary container and either additional primary container or the leaking primary container is repaired as specified in

Springle 6 or closed as specified in Springle 7 and replaced by a new primary container, the owner shall demonstrate to the Satisfaction of the local adency that the requirements of Subsection (c) of the Section are suit acheivable or replace the recondary container.

(e) (M) The becompany contended 5/ell.nevs and ability of content with fellowed yourself.

- Argustin for Sections & Contestions EROSETURE ADSIDE ONLY SOC SEMINATE GARRATHES :2 TIY ST FERRE 199 SECTIONS OF PARTICULAR OF FUR SECTIONAL
- In the case of multiple orders contained attoms store executed of the secondary contained to the apprentiation of the secondary contained to the apprentiation of the secondary contained to the apprentiation of the secondary contained at the secondary c
- cfl (e) I the <u>secondary conteiner</u> storage (actific is open for calcially then it the secondary contained with the secondary conteined with the polymer of the twentymical (24) bounded minded (120) year stora to addition to the languaged in Subsection (e) (d) and (d) of this Section.

- IN Its volumetric Volume requirements for the page space of a granular material placed to the a secondary container as dark except action of the secondary of the granular point space to the secondary of the granular point space to the secondary points. It is not the granular point space to the secondary points. It is not the page the page to the secondary points. It is not the page the page the page the secondary points. It is not the page the page
- th) Secondary containers shall be advised with a collection system capable of rampying any presidentian, subsurface infiltration or hazardous substance released from the primary container.
- for monitoring by slowed to a collection sump. One or monitoring by slowed to a collection sump. One or more eccess casings shall be installed in the sump and size to allow removal of the collected liquid. The access casing shall be extended to the ground surface, perforeted in the region of the sump, and covered with a locked waterproof cap. If this access casing is within

a secured facility, the requirements for a locked cap

may be waived. The coaling shall be thick around to

withstand all anticipates applied riverses with

appropriate angineering salety inchor, and constructed

of materials that will not be structurally weakened by

the stored product for gonate, capture, or man product

constituents for which analyses will be made.

(1) Systems for secondary containment utilizing membrane
liners shall meet the Collowing requirements:

of 0.57 successor liner shell have a permeability factor
of 0.57 successor less per square foot per 24
hours. Such permeability shell constitute the
maximum rate of the transport of the beserdous
substance proposed for storage over time.

Permeability shell be evaluated according to
accepted engineering practices for materials
testing. Acceptable methods for determining the
permeability are provided in Appendix I.

The membrane liner shell be considered to have satisfied the requirements of Section 2631(c) if and only if the liner material meets the following standards. The material properties specified in these standards shell be determined using accepted engineering properties testing.

Acceptable methods for determining these properties

- the original liner bembrane material

  thickness.
- (B) Change in elongations the mannum spane in elongation of the liner membrane material at break after 24 hours of immersion in the stored hazardous substance shall not excess plus or minus 2 percent of the original elongation.
- Spore A perdoese after 24 bouts of immersion in the hezardous substance shall not change plus or many 5 percent of the original
- (D) Rate of thereport: the rate of transport
  through the liner membrane material of the
  nexardous substance after a period of 24 hours
  shall not exceed 5 percent by weight.
- (E) Rate of solubility; the rate of solubility of

the liner membrane material in the hexardous substance for a period of 24 hours shall not exceed 0.1 percent by weight.

- tensile strength of the parent meterial when tested in accordance with accepted engineering practical for materials testing. Acceptable methods for determining the linew seem strength are provided in Engenous is.
- the liner shall be installed under the supervision of a representative of the rembrane liner fabricator, or a contractor certified by such fabricator.
- (1) The excession base and stalls for the synthetic liner shall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any spans objects or protrusions.
- Consumments are constructed and south between and secondary constructed and statements of past between the construct to construct the construct to the construc
- \*\* \*\* \*\* \*\* \*\* \*\* \*\* \*\* \*\* \*\* \*\* \*\* \*\*

Section Scots number successed to Section Sequence to:

- (o) The design of double-walled tanks shall allow for operatoring of the annular space.
- e monitoring method shall not be allowed unless a strike grete or other approved devices used to protect the tank are located directly under the monitoring agening.
- Interested that any loss of hetergous substance from the primary container will drain by a central location within the annular space, to be parected by a monitoring device or method
- interest within the initial design of the grimery container enall be approved by a nationally recognized.

  Independent, testing organization, or a demonstration of investity with the primery container shall be required by the local agency.
- to trostetion shell be maidited on emblosed mains (e). Wil burdent contained end donblackerised racks andrack

methods specified by the manufacturer or, if none exist, best engineering judgment. April priese 1880 BEAGS. D Reference: HKBC 2518W. 15.84

Adopt new section to read:

SEAS: Courtions Standages for Maw Governous Stonage Dain

- (A) This amounts is applicable unly by trise underground procuse temps by the process of the applicable of the process of the applicable.
- (b) The owners or operators of underground torage which subject to this Saction shell implement appropriate program that is approved by the local agency and required in the permit. The program shell utilize are or more of the methods described a Subsection (c) of this Section.
- Subsection (2).
  - the payment container shall incorporate all of the
    - (A) Provisions that all exterior surfaces of the

inderground storage tank and the surface of the floor collectly beneath the tank shall be monitored by Carect View be.

18) Whater imprections this be parrached derly except of meakeding sun iscontified fife sud/or Jederal Lulidays, and may be more frequent if Spaignates by the local agency. Tie. tuspection achedule shall be established such Stat the heat wife occur on a tont his pasts when Fue jidnia je⊼ej Ay tµë tëvk iz 97 °£2 inhest. The inspection frequency shall be elected typh that any unauthorized release Hill Lamers apparently on the extensor of Gr <u>urfage Ammediately bengath the</u> underground storage tank between visual inspections. The evaluation of how long the dazardona enpetence remaine opterkepje Spall consider the volatility of the bezerdous substance and the porosity and slope of the ENDieds Twwestwiesly beaseit file madebaroning storage tank.

(C). Recordation of the liquid level is the tank at the time of inspection.

(D) The observation of any liquid on the extensor

of on the sunface immediately peneath the inderground storage tent basing visually monitoned shall cause the wanes or operation to implement all or a purious of the fosterior to actions. The applicable actions and their timing shall be based on the sitematical situation; shall be intended to determine if the observed liquid constituted by included in unauthorized releases and said. De included in the permit.

1111 Testing of the underground storage tank utilizing the procedures pretribed in Section 2543 of October 4.

from the underground signage tenk and the secondary container (as specified in Sobsection).

A program which relies on detecting the mazerdous substance in the space between the primary and secondary container shall utilize one or more of the methods provided in Table 3.1. The following

### table 3.1

## teurine of 2002 ville ted recenders 3 bitables 30 tom Secondady Gootsweet

Lung.tion	Methods of Mankson						
System (1) Secondary of the	Tyge of Gubstarc≈ Stored	Indicator (2)	Hazardey Subatahra Sengor (3)	Yapac Monitor	한민도보다는 21 Yacuym 1253 Detector (4)		
йет ъст ъг? ОпХ	Molatije Monvulatik Molatik Molatik	: .	X Y	X -	× × × × × × × × × × × × × × × × × × ×		

- (1) 8 "dry" Eyetem ich ing inning grand Withy ine secondary container yering bytes ices.
- (2) Includes: continuously successes medacided of lectronic devices manual determinations to detect the process of any liquid to low, exatems on a change in liquid levels in twelf exatems?
- (3) Troinges estated Sheltsteine and Characteristic contains for all full bressure
- (4) Primarily used for double-walled time to detect changes in pressure or yaquum must be approved as part of the grimary and secondary container. The use of pressure or yaquum must be approved as part of the grimary and secondary container approved a return of setup.

# requirements shall apply when appropriate.

- Countingous monitoring calife shall pe
- (B) Manual monitoring shall be performed daily except on weekends and recognized state and/or federal holidays. Manual monitoring may be performed on a more frequent basis as required by the local agency.
- of the hazardous substance is not determined directly (i.e., liquid level measurements).

  the monitoring program shall specify the proposed method(s) for determining the presence of the hazardous substance if the injurect methods indicate a possible possible
- (d) All menitorion programs shell include the following:
  - A written routine monitoring procedure which includes, when applicable; the frequency of performing the monitoring method, the methods and equipment to be used for performing the monitoring, the location(s) from which the monitoring will be

performed, the name(s) or title(s) of the sersocis) responsible for performing the monitoring and/or maintaining the equipment, and the reocction formats.

delight the special part of the permit policies which demonstrates, to the satisfaction of the loce, assume, that my unauthorized delighe will be removed from the encordary patterner within the special possible time and no longer than the time consistent with the ability of the secondary sentence. Increasing the small include, but is not limited to the following:

A descript who of the proposed methods and equipment to be used for removing the required equipment, if not permanently on the required equipment, if not permanently on the required equipment and an equipment of the required equipment.

Ine name(s) or title(s) of the person(s)
responsible for authorizing the word to be
performed.

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TIL ING PERSONSTITUT DE PERSONS ENG SELIE OF GENTRES

Authority: | 450 25288.2 Rafarence, 7890 25280, 25284 Adopt new section to read:

2839. Cometruction Standards (on less distinctionable Eyel Laye

- too new underground storage tweets entertain statements for new underground storage tweets which entertain statements by permit applicable to liev of pertian fail. If this pertian is used to liev of pertian fail. If this pertian is used to seek of pertian fail then the undertain statements by undertain statements and seek of seek of seek of seek.
- Primary containers weed for the underground engines of motor yenicle fuel and constructed order this section shall consist of productivities that the entired of finerglass neinforced plastic carriedcally protected sizely or steel of alth glass (thre reinforced plastic interced plastic three reinforced plastic interced in Section 1633101 through 1ft. And (4)
- to the beguirements of Section 26331a and 2633.
- (a) The parmit applicant secondary contexner shall be

the less interception and detection system entered the local scenes the settlements and conservation of the local scenes the settlement and conservations.

- (e) Tethods of construction for the leaf interception and catestion system for utilizing membrane liners shall geconsidered to have satisfied the requirements of facility it, and only if, the liner material means the following standards:
  - permeability factor specified in Section 3631(1)(1)
    as tested exercise ASIM Sections B.
  - containment of the outer vehiclefuel in that such
    material shell meet the criteria set forth in
    Section 2637:334(27:0) through (E) as tested against
    only Reference Euel B.
  - (3) The membrack liner shall meet the requirements set forth 10 Section 2631(1)(3).
  - of a representative of the membrane liner
    februgator, or a contractor certified by such

### <u>fabricator.</u>

- contact with the synthetic liner shall be predered to the liner febricator's specifications and their protousions.
- It is less interception and testerion assemble the interception and meterion and interception and meterion and detection and transmitted and meterion and detection and transmitted and meterion and detection and transmitted and meterion and
  - The esociationary persons "" ... they reterested and
  - ing meximum lead which could go undetected under the inventory presentation method presented in Submections: of Section 2634 of the Article and the meximum period during which the leak will

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  explant
- district fo the distantion electricity

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- 15) KEY The payure of the unsaturated exits index the received exits and their additives edeemb soutaminents or exitem vertical movement of conteminents.
- the leak interception and detection existent and
- districted them for between contespent force seen (13) (3) Just retain and finite of the meaning size of the contespent which have seen
- entometror courine courtabenets obsusting brasshing jose (8) (1) Listablished brown exatems foot fuctings so

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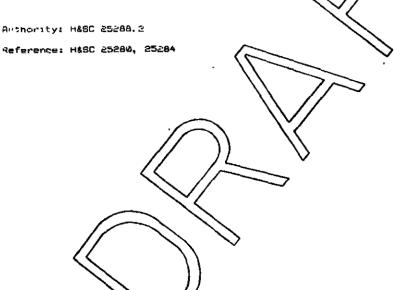
exatems are seement from the leak to the plotter exception

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exercise and flow restricted to a visual or and present the entitle of a district of and plotter

exercise and flow restriction device and another of and plotter

exercise and flow restriction device and another of a



#### Adopt new section to read:

- 2634. Monitoring Stangards for New Motor Yeniki 120: [4018
  - (a) Monitoring of underground tanks used for the storage of motor vehicle fuel and constructed gursuant to the standards of Section 2533 of the suttake stall constant of all of the following:
    - empeacrious (D): (C): and (Q) at this sacriour (F): Woulforing of the Jast Later battles and departion
    - (2) Daily gauging and inventory reconstiliation by the operator pursuant to section 8644 2642 of Orticle
    - Hydrostatic testing of the tenk every Amp years
      according to the Criteria specified it Section 2647
    - (4) the presentated piping systems shall be monitored utilizing an omiline pressure loss detector and flow reduction device. The detector shall be connected to a visual or audible slare system where it provides for at least a 50 succept reduction from normal flow rates.

- (b) The floor of the lesk interception and detection existen whall be constructed on a firm base and sloped to a specific location or collection sump.
- (c) ANY ON Access casing(s) shall be installed to interept the collection sump or specific location of safe mentitering leterien(. The casing shall be:
  - (i) Capable of allowing any liquid that has be source and detection mystem detected rentainer to enter the capings
  - 12) Sized to allow efficient removal of collected liquid and to withstend all antiquested applied atcresses using appropriate engineering with 4 safety factors; of 1/3
  - (3) Constructed of materials that will not be structurally weakened by the stored product nor donate. Captuber or mask product constituents for material analyses will be made:
  - 14) Screened long the entire vertical zone of
    permeable material which may be installed between
    the grimary container and the leak interception and

## detection exetemt tecondent conserver

- [5] Taponie of precluding leakage of any hazardois
  substance from the casing by break outside of the
  pak interception and detertion system; secondary
  (rotainer and
- inched to the ground surface and coweres with a licked waterproof pap or she based in a surface security structure that sill protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A secure active will satisfy the requirements for protection enames to unborized access and vandalism.
- (d) Monitoring of the less interception and detection exates
  their incorporate all of the following:

The use of a continuous monitoring device connected to an audial/visual alarm system or menual monitoring performed dealy, except on weakends and recognized state and/or federal holidays.

Monitoring may be required more frequently by the cost agency based on an essessment of the exactable yolume of the leak interception and desertion system, the accuracy of the proposed

monitoring method, and the meximum leak which could go undetected under the inventory reconciliation method presented in Subjection (e.g. Approved methods of monitoring the leak interception and detection exatem include liquid level indicators. hazardous substance sensors, and vapor monitors as specified for voletile bezardous substance in Table 3.1.

- (2) A written routine monitoring procedure which includes: the frequency of performing the monitoring method, the methods and equipment to be used for performing the monitoring, the location(s) from which the monitoring will be performed, the name(s) or title(s) of the person(s) responsible for performing the monitoring and/or meintaining the equipment, and the reporting formet.
- for methods of monitoring where the presence of the bezerdous subtience is not determined directly (i.e., liquid laws) measurements), the monitoring program shall specify the proposed method(s) for determining the presence of the hezardous substance it has indirect sethed indicates the possible presence of the motor vehicle fuel.
- AFY MODITORING OF CARD SAFINE CARCIDAG IN SECTION RESERVAN

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101 Id. the indestruction that used for the storage of matths

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substance of matchine contemporalization details calcing and

subsection (a) of this section) of greater than one
of the fullment shall be tested according to the

procedures solcified in subsection (e) of this section:

(11 Paily loss of gain of 100 50 gallons, or

ynderground Storege tenk throughout tolded of hazardous substance idlitered over the seven days on 180 mellons, whichever is greater, but not greater then 350 mellons, or

Finds Find symplements fore of pero fa dejetrated on

til ter il intertor, meconciliation correct tongital of anomicaed in Gritche & of this standard and the concentration (e) the 21 mile decimal and anomaliation of the operation (e) the 21 mile decimal and anomaliation of the stand of the 21 mile decimal and anomaliation of the stand of the stand of the contrast and anomaliation of the standard that the contrast and anomaliation of the standard that the contrast and the standard that the standard and the standard that the standard the standard that the standard t

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Transfer of betations substances into and out of the underscound stances take may consider during undiscended within the specified fire periods and end like

ENTAGENTARY Ambientation of the transform daring continue daring to Sucception (a) (4) of this section. Josephone daring to Sucception (a) (4) of this section.

3.0

- (1) The operator shall notify the bener we built Gn in writing of the fact that inventory reconstitution extended includes a pain or loss of Datacequis autainoges or water within 24 bouns of the collection reconstitution which includes the loss of water.
- (E) The defracer total review the inventory records within the (2) hours to determine if an error exists which would cause the gain or loss to be less than that specified in Subsection (e) (e) (e) of this section.
  - The operator shall have performed by a qualified person a complete review of all inventory records from the last time a zero luss or gain condition exists. This shall be completed within 24 bours of the conclusion of Subsection (f) (4) 121-

The resolve accessable obvaiced feethittes shell be consisted by trained personnel within 55 towns of

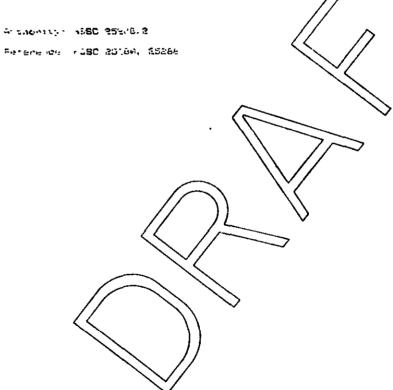
completion of Subsection (f) (e) (3).

- LST All dispenser weters associated with heroldous substance withdrawal shell we checked for calibration within 64 hours of completion of Subsection (f) /e/ (b):
- Ine tenk shall be tested vs.no toe teste described in Section 2008 2006 of Orticle of history and overs of Completion of Subsection (f) (6) (6).
- (8) Additional tests or investigations as required by

#### End local eggsters

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  - detection exacts the section reception and detection exacts section to the sented of time section detection of an unauthorized release and sleaned of time section of the sented of time
  - 3) 125 Denki from the bottom of the leak interception and categorian system strongery fertainer to the breest of bottom level of occord make...

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Adopt new section to read:

6625. Gereral Constitution Standards

(a) The following sections that appears all between and setting of systems.

This primer's containers and industrially with all of the

Cathodically provented steel tanks, steel tanks

cled with plans fibre reinforced plastic, and plans
fibre plastic banks shall be fabricated and

descaped to standards developed by a nationally
recognized independent testing organization or be

listed by the testing organization. Applicable
descape standards shall include, but are not limited
to those provided in Appendix I.

delighted storage tanks shall be tested by the manufacturer or an independent testing organization for durability and chamical compatibility with the parendous substances to be stored using recognized engineering practices for materials testing.

Screptable methods for determining durability and

stances are provided to Oppendix in chamical competibility with the perecious ampi

13: 111 9 0/20+1000 Edice seed weet whee the child plate) shall be dentered under all stressible, apenings of the underground storage lene. whate share we constructed of stee. or. / the stepl is not compatible with the tazardous substance stored, a material resistant to the stored hazardous substance. Ine wist of the plate shall be at least 9 inches wide and have at arms of i squarectoot or be equal to the area of the accessible opening or quies tobe, whichever is larger. The thickness of the steel plate shall be at least 0.053 inch (1.35 mm) and those constructed of other materials (as required) shall be of sufficient thickness to provide equivalent protection. The plate shall be rolled to the contours of the tank and bender or seat weared to Brace" que para a dividen acea annas es ina suaviva OF A TELES ANDS! HOVEMENSES IN ENGINES

its Single-well primery containers of steel and the outer surface of double-welled tanks constructed of steel shall be projected by either a properly installed, helpfelped, and sonitored cathodic projection system with or without costings or

the corrosion history of the area.

when retoric ecotection is selected, the system shall be designed by a requestered corresion engineer at a Nach corresion apacialist or in accordance aim the certification listing.

Whichever is epilicable. The cathodic protection system shall be initially tested by a registered corresion specialist.

bestoring of the cethodic protection existen shell bestoring of the direction of a registered correspon engineer or NACE correspon engineer or NACE correspon engineer at the frequency specified in the certification or in accordance with the schedule prescribed by the system designer, but no less then semi-ennually.

Vaulted underground storage tanks are exempted from the requirements of this Subsection.

- abeli be instelled according to the manufacturers and couple-walted terms whitten recommendations or, if no written recommendations exist, best engineering practices.
- being put into service in accordance much the applicable sections of the Code under source tuex were built. The SSME code stamp. SPI benegram, or the Listing Mark of Underwriters Laboratories. Incorporated, (UL) or ear other featuresly recognized independent beating openization shall be evidence of compliance with this requirement.

  Anathries of the Manufacturer to de process right prior to previous the factors.
- 17) 121. Sefore being covered, enclosed, or placed in user. Fallowing restallation all ungencious storage tents and pupping soall be twated for tightness either hydrostatically or with air pressure at not igns then 3 lbs. per square inch 129.58 k Pal and pot more than 5 lbs. per square inch 129.58 k Pal and pressure storage shall be tested according to the requirements specified in Section 3-7.1 of NEPG 32.

"Flammable and Combustible Liquide Code".

Double welled tanks are exampt from the requirements of this section provided that the annular space is monitored with either pressure or vacuum testing. In effortance with standards and providences set form in distances &

- (8) When converse by the local snency, all underground storage tanks small be snyloged with an overflow projection system which includes the following slamewite:
  - monttors and indicates the liquid level in the tent and exter (2) or (3) or both.
    - An audition or visual slarm system triggered by a liquid level sensor to elect the operator of or improving overfill condition, or
    - An automatic shut-off device that stops the low of product being delivered to the tank when the tank is full.
  - (D) A soill catchment bearn which surrounds the
    fill size and prevents the inflow of the
    hexardors substance into the subsurface

### #TY1CONMENT.

- (9) The everflow protection system required in Subsection (b)(8) of this Section shall be satisfied for underground storage tends containing motor yabiqle fuels in which:
  - (A) Both the fluid level is the controlled by the fellity operator during titling of the spotential storage table or
  - as paramened by table Breakung or as paramened by table Breakung on the satisfact appropriate to be at light 183 backens of the tilted in detaining immediately button to be 181 like available capacity of the table to be
  - GO The helectone substance being delivered can be settened form the tank and the exelleble tank capacity is determined immediately prior to filling.
  - plos and prevents the inflow of the motor
    yehicle fuel into the subsurface environment.

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    - ten Gible-Bingut Bebester Setheres Abeststepre Esternise setting and Secreta ton Terring and Secreta to the Secreta series and Secreta series and

- The competentities and the court with an inter segments of the court for the court filt of the courtexpressions.
- tel Secondary containers including less interception and detection exstems shall comply with all of the following:
  - Interest container shall, it a minimum.

    encompass the area within the system of vertical

    Diames succounding the exterior of the primary

    containment unit. If packfull is placed between

    the primary and secondary containment, then an

    evaluation shall be made of the primary containment

    over the vertical distance pathern the primary and

    secondary containment. The secondary containment

    shall extend beyong the vertical planes an

    additional datases foot:
  - TELEGRAPHY CAUTERISES.

    Statistics for the spece between the bitment and statistics from the first spece between the bitment and secondary sections.

- (3) (8) If the space petween the primary and secondary containers is backfilled, the partial material shall not preclude the vertical movement of leakage from any part of the primary container.
- the secondary container and any backrail material between the primary and secondry contained healt be designed and constructed to promote gravity drainess of a seak of haterdous substances from any part of the primary container to the monitoring locations(s).
- Materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or polisonous gast or the deterioration of a primary or secondary containers shall be separated in both the primary and secondary containment so as to avoid potential intermixing.

Drainage of liquid from within a manner approved captainer shall be controlled in a manner approved by the local agency so as to prevent hezardous materials from being discharged. The liquid shall by analyzed to determine the presence of any of the majordous substance(s) stored in the primary container prior to initial removal and monthly thereafter for any continuous discharge (removal)

to determine the appropriate method for finel disposel. The liquid shall be sampled and analyzed immediately upon an indication of an unauthorized releasefrom the primary container.

- for primery container installed completely penesso the pround surface, the original execution for the secondary container shall have a materitiant cover which extends at least 1 foot perond each boundary of the original excevation. How cover toall beamphalt, reinforced concrete, or equivalent material which is aloued to drainways leadings way from the excevation. Manneys shall be constructed as water-tight as practical. Southerwelled tanks and open vaults are shaupt from the medulications.
- 181 The actual location and orientation of the underground tanks and appurtament piping systems shall be indicated on as: built drawings of the facility. Comiss of all drawings, photographs, and plans thail be suspitted to the local agency.

conservment sheet is becalify to bythe paraged bythe terropista the sheetfor of the burners forthare the same stating the forthe of forest lug secondary roughtoer sheet effent CHEINE OF THE CASE DESCRIPTIONS OF TOOS CONTINUES OF THE STATE OF THE

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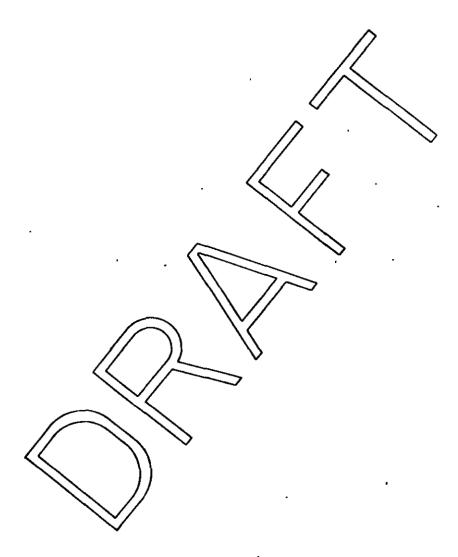
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Authority H&SC 5588.2 Reference: NASC 5288, 25288



Article 4. Existing Underground Storage Tank Monitoring Criteria

Adopt new section to read:

2640. Applicability

(a) All surers of existing undergrouping storage tanks sup to this Subchapter shall implement, pursuant to the - . compliance date in Chapter 5.7 of Dayision 20 of the Health and Safety Code, a Passal menitoring or monitoring alternative system that complies with this Article and is approved by the local mency. A local agency shall not trave permit if the underground storage tank cannot be adequately constored. To be adequater the monitoring system must be capable of: determining the containing ability of the underground atoraga table betective fative and highert aventherised referred any unauthorized Veleage that may occur in the furtire: and in contain situations, determining if hazacions substances are present in the area around the underground atorage tank. He capable of deadacids the are the water maties directly. The failure to implement an approved monitoring system shall be cause for the local agency to require closure of the underground torage tank pursuant to Article 7 of this Subchapter.

(b) The objectives of the monitoring program for existing

underground storage tanks are: to determine if
unauthorized releases are occurring of Made edebtied in
the past and to detect unauthorized releases that occur
in the future before ground water is affected. And to
diffetly mediants the quality of the trough mater
underlying the tank: Therefore; epitiple absilitions
systems; as described in Sections 28%; through takk:
systems; as described in Sections 28%; through takk:
shall be implemented where technically feasible to
existing tanks that he had hade a secondary containment
that meets the requirements of Aptible 3/

subject to this Subchapter shall implement visual

modificing as described in Section 2642 2581 of this

Article when fessible. If the entire underground

storage tank is not susceptible to visual monitoring,
but a significant portion of the underground storage

tank can be visually monitored, then that portion of the
underground storage tank shall be monitored visually.

portion of the year did it fladding to implemented during a portion of the year did it fladding to its presented of sixed lifeties shall be utilized during those portions of the year when feasible. If Madded it shiest visual monitoring cannot be is implemented for the entire underground storage tank throughout the entire year then a sixed faria of monitoring alternative specifies in Section 2641 shall also be implemented. The monitoring alternative shall be operative during those times when visual monitoring is not fearable or for those portions of the underground storage tank which are not susceptible to visual monitoring.

(d) (e) All owners of extends underground storage tanks
subject to this Subchapter who are not able to implement
visual monitoring as specified in Section 2642 2681 of
this article shall implement a monitoring elternative

each alternate assistants marked as specified in Section
2641 2622 Approved 2686 of this article. Sells

energy assessing in Season 2688 of this article. Sells

energy as assessing unless on the ability to implement
titues as approved by the local agency which means the
interest as approved by the local agency which means the
the subsession (e) of this section. If an energy
approved the local agency that the standard of
the obligation to implement solls mentioning.

- monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 are minimums. Local agencies, as a condition of approval of a specific monitoring alternative, shall require additional or more frequent monitoring if necessary to comply with the objectives specified in Subsection (b) of this Section and Subsection (d) of Section 2641 of this Article.
- (f) Local agencies shall reduce the monitoring frequency for visual sonitoring or a monitoring alterhetive listed in Section 2642 of this exticle in situations where environmental conditions where the impracticable, physically impossible, or life threatening to complete the required monitoring.
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Author tt: H&SC 25288 2 Reference M&SC 25282, 25284, 25284.1

### Adopt new section to read:

# 2642. 28#1 Visual Monitoring

- (a) Visual monitoring shall be utilized as the principal
  leak detection monitoring method, where feasible, for
  all or a portion of the exterior surfaces of an
  underground storage tank. All owners of existing
  underground tank owners shall implement visual
  monitoring for any exposed portion of an inderground
  tank unless they demonstrate to the loval agency that at
  least one of the exemption criteria of subjection (b) of
  this section is applicable. If visual monitoring is to
  be implemented, then the provisions of subsections (c)
  and (d) of this section shall be follower:
- (b) If any one of the following conditions are met the owner
  is exempted from implementing visual monitoring for that
  portion to the tank which the condition applies.
  - any partion of an underground storage tank that is
    in contact with the ground, surface a floor or pad
    such that it cannot be seen. A tank in a saddle
    should not typically qualify for an exemption.
  - (2) If the act of visually inspecting the exterior of

- the underground storage tank would put a person in a physically unsafe environment.
- protection equipment (other than normal protective equipment, such as steel-took shoes, hand bat, eye or ear protection, etc.) in order to visually inspect the entire of the underground storage tank.
- (4) If the underground storage tank is located at a facility which is not started on a daily basis.
- (c) A visual monitoring program shall incorporate all of the

following:

- erociations that all accessible exterior surfaces of
  a tank and the subject of the floor directly
  beyeath the benk shall be monitored by direct
  lewing.
  - A written routine monitoring procedure shall be prepared and be available at the facility which includes: the frequency of visual inspections, the location(s) from which observerations will be made, the name(s) or title(s) of the person(s) responsible for performing the observations, and

the reporting format.

- (3) Visual inspections shall be performed dail minimum, and shall be more frequent if necessary. The inspection schedule shall be established that inspections occur on a routine wais Az least one inspection shall be performed when the liquid level in the underground storage tank is at its highest. The inspection frequency shall be selected such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the voltility of the hazardous substance and the porosity and slope of the surface immediately beheath the underground storage tank or portion thereof being visually monitored.
- Recordation and reporting of the observations made and the liquid level in the tank at the time of the inspection.
- (d) The observation of any liquid on the exterior of or the surface immediately beneath the underground storage tank being visually monitored shall cause the owner or operator to implement all or a portion of the following

actions. The applicable actions and their timing shall be based on the site-specific situation shall be intended to determine if the observed liquid constitutes an unauthorized release; and shall be included in the permit.

- (1) Laboratory or field analysis of the observed
- (2) Testing of the underground storage tank utilizing the procedures described in Section 2643 25#2 of this Article.
- (3) Removing all hazarous substances from the underground storage tank.
- (e) Visual menitoring of the exposed portion of a partially concealed tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank warms a zwe syner monitoring alternative specified maximum described in Section 2641 this Article.

Authority: HESC 25288.2

Meference: H&S 25284.1, 25284.2

Adopt new section to read

# 2643. 2682 Underground Storage Tank Testing

- implementing a monitoring alternative in Section 2641 of this Article which specifies tenk testing subject to this subsumpter shall except as provided in subsection (b) of this sections (b) (c) through (c) of this Section.
- The control of existing analytowns storage that are abbited to the least one of the tollowing equalities and agency that at least one of the tollowing equalities approached to the local agency that at least one of the following equalities applies:
  - THIS OFFICE IN THOSE PRICED TO SPECIOU SERV OF
  - 127 12 ANY YEAR PARTH MARKE THE CONSTITUTE SCHOOL BA PARTHERS IN MIXHOMY MARKET AND SHEET ON CANHOL BA PARTHERS IN
- (b) [6] resting of underground storage tanks shall utilize a method canable of detecting a release of a hazardous substance loss of at a rate of least 0.05 gallons per

hour (gph) or less. These methods are limited to those tests that make adjustments for all of the following, if applicable:

- (1) the presence of vapor pocket
- thermal expansion or contraction of the hazardous
  substance, which include any density
  considerations,
- (3) temperature strat\_fication in the tank,
- (4) evaporation
- (5) pressure variations in the tank, and
- (6) deriec ion of the tank ends.
- (c) Testing of pipelines which have been isolated may ubilize hydrostatic pressure test in lieu of the test required in Subsection (b) of this Section. This hydrostatic pressure test shall be conducted at a pressure of between 35 and 50 psi (2600 mm Hg). A pressure drop of more than 5 psi (2600 mm Hg) per minute indicates a leaking pipeline. A pressure drop of less than 1 psi (260 mm Hg) but greater than 2000 is inconclusive and a test pursuant to Subsection (b) of

this Section shall be performed. The test shall be performed for at least five minutes.

- (d) The test required in this Section shall be performed by personnel who have received training in appropriate test procedures. The person performing the test shall certify that the test procedure utilized takes into account the variables specified in Subsection (b) of this Section and is capable of measuring leaks of 0.05 gallons per hour or less. Additionally, within one year after the development of a listing or certification procedure for this type of test, only listed or certified tests shall be accepted.
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- (e) Within thirty days of completion of the leak detection

  test, the underground tank owner shall provide the local

  agency with a report presenting the following

  information:
  - those recommended by the developer of the tank test
    procedure manufacturer) for the leak detection
    method;
  - (2) The test results used in determining the volumetric rate of product loss; and
  - (3) The volumetric rate of product loss.
  - The information shall be presented in written and/or tabutes format as appropriate and shall be at a level of detail appropriate for the test procedure used.
- (f) Underground tanks which are found to lose product at a rate greater than or equal to 0.05 gph shall be repaired or replaced as specified in Articles 6 and 7.

- this Article, performed on the underground storage tank

  st shi diker interval to determine if the underground

  storage tank is leaking shall be reported by the tank
  owner to the local agency within thirty days of
  completion, as specified in suppression feets) above
- (h) Underground storage tanks or pipelines containingflammable or combustible liquids shall not be pressure
  tested using air or other gases.
- blessale 1038 SIGNETIONS (ICCC) WALRES OPELATIONS);

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tuthority: H&SC 25288

leference: H&SC 25284, 25284,1, 25284.2

## 2641. Monitoring Alternatives

- to this Subchapter who cannot implement visual
  monitoring for the entire underground storage tank
  during all periods of the ear shall implement, within
  the time allowed, one of the monitoring alternatives
  specified in Subsection (a) of this Section.
- The local agency shall review the monitoring alternative proposed band on the specification in Subsection (d) of this Section and small approve the monitoring

  Throative if the find that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in Subsection (b) of Section 2640 of this article. If the proposed monitoring alternative cannot be approved, then the local agency may request the submitter of another proposed monitoring alternative or appecify the implementation of a monitoring alternative.

# (1) <u>Underground</u> Storage Tank Testing

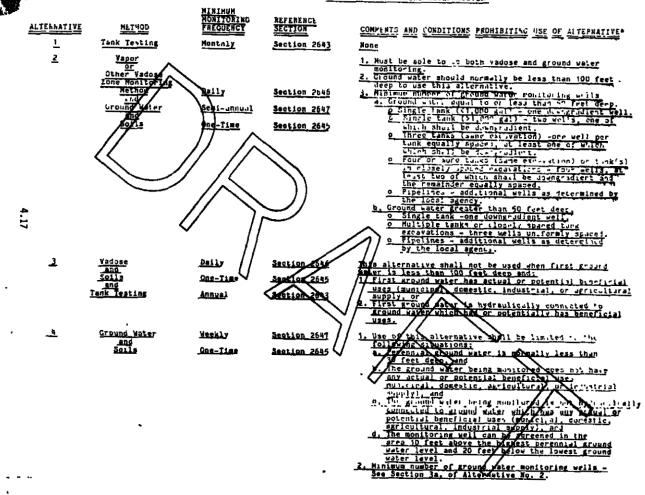
- This monitoring alternative shall at a minimum utilize the procedures specified in Section 2643 of this Article and shall be performed monthly at a minimum.
- (2) Vapor or other Vadose Zone Monitoring and Ground
  Water Monitoring with Soil Sampling
  - Include vadose zone monitoring, ground water

    monitoring, mo soil sampling at the time the

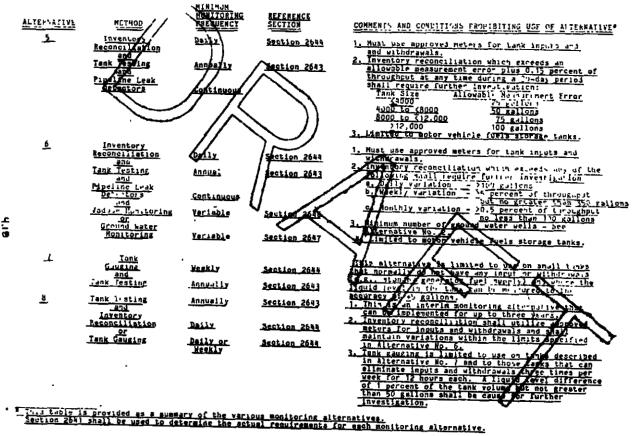
    boring(s) and walk(s) are matalled.
  - (B) The vadeae zone monitoring shall be designed
    and installed pursuant to the procedures
    specified in Section 26% and 26% of this
    irticle / Vadose zene monitoring shall be
    performed either continuously or daily.
  - (C) Ground water conitoring wells shall be designed and installed according to the procedures specified in Section 2647 and 2648 of this Article and monitored semi-annually at arnimum. The minimum number of wells shall be as specified on Table 4.1 for alternative

The optional monitoring alternatives are as follows:

#### TABLE 4.1 MONITORING ALTERNATIVES



## TABLE 4.1 MONITO ". NG ALTERNATIVES"



- no. 3. Analysis of samples collected can be by visual observation or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated.
- (D) The soil sempling and analysis shall be

  performed as specified in Sections 2645 and

  2648 of this Article. Samples shall be taken

  from all boring(s) and sell(s) restalled.
- Vadose Zone Monitoring, Soil Sampling and Underground Storage Tank Testing
  - include vadose zone monitoring and soil

    sampling at the line the boring(s) are

    installed. This alternative shall not be

    approved of first perennial ground water,

    including perened ground water, is less than

    100 feet deep and this ground water has actual

    or potential beneficial uses (domestic,

    quicipal, agricultural or industrial supply)

    or is hydraulically connected to ground water

    which has actual or potential beneficial yaes.
  - be by on-site boring constructed according to

- the specifications of of Subsection (1) of
  Section 2648 of this Article or by evidence
  based on recently constructed perrby wells or
  borings that first ground water is
  significantly deeper than 160 feet.
- installed pursuant to the procedures specified .

  in Section 2646 and 2688 of this Article.

  Vadose zone monitoring shall be performed either continuously or deliv.
- (D) The soft sampling and analysis shall be performed as specified in section 2645 and 2648 of this artists. Samples shall be taken from all borings installed.
- (E) Underground storage tank testing shall be seefformed yearsy at a minimum according to the brocedures specified in Section 2643 of this Article.
- (4) Ground Water and Soil Testing
  - This monitoring alternative shell, at a minimum, utilize ground water sampling and soils sampling and analysis at the time of

well installation. This alternative shall not be approved if any of the following conditions exist:

greater than 30 Seet deep; or

(ii) The ground water being monitored has actual or patential beneficial uses (domestic, municipal, industrial or agricultural supply) or is hydraulically connected to ground water which has actual or potential beneficial uses;

the highest perennial ground water to 20 feet below the lowest perennial ground water to 20 feet below the lowest perennial ground water to 20 feet.

designed and installed according to the

designed and installed according to the

procedures specified in Sections 2647 and 2648

of this Article and shall be monitored monthly

at a minimum. The minimum number of

monitoring wells shall be as specified in

Table 4.1 for alternative no. 4. Analysis of

samples collected can be by visual observation

or field or laboratory analysis as determined
by the local agency depending on the
constituents being evaluated.

performed as specified in Sections 2645 and

2648 of this Article. Samples shall be taken
from all wells installed.

(5) Inventory Reconciliation, Underground Storage Tank

Testing and Pipeline Leak Detectors

(A) This monitoring attemptine shall, at a minimum, utilize inventory reconciliation, underground storage tank testing and pipeline leak detectors. The usa of this alternative is limited to those underground storage tanks which contain actor vehicle fuels.

(B) Inventory reconciliation shall be performed

according to the procedures specified in

Section 2644 of Mis Article. The owner or

operator of an underground storage tank that
experiences a variation in inventory

reconciliation in excess of allowable

variation(s) shall implement the evaluation

procedures specified in Subsection (f) of

Section 2634 of Article 3 within the times specified.

(1) The daily variation in inventory reconciliation shall be the discrence between the calculated volume in storage and the actual volume in storage.

the previous days physically measured inventory, the sum of the daily variations (considering positive and negative values)

the presions day's calculated inventory, then the daily variation shall not exceed the allowable variation. The calculated inventory on any even day shall be based on continuous calculations from the base day which utilized the physical inventory. The period of continuous calculations shall be no greater than 30 days.

throughput during the period under

aonsideration times .15 percent (.0015).

The allowable variation shall be Sum of the measurement error from Table and the throughput error calculated in accordance with Subsection (iv) of this Subsection. Table 4.2 <u>Keasurement</u> Error <4000 8000 to <12000 all values in galvons Underground storage tank testing shall be performed yearly at a minimum according to the Procedures specified in Section 2643 of this Article. (D) All pressurized pipelines shall be monitored

using an automatic on-line pressure loss

detector and flow restriction device. The

detector shall be connected to a valual or

audible alarm system inless it provides for at

least a 50 percent requestion from the normal

flow rates. Section pipelines shall be

monitored daily for indications of possible

leaks.

(6) Inventory reconciliation, Underground Storage Tank

Testing, Pipeline Leak Detectors, Vadose Zone or

Ground Water Monitoring and Soil Testing

Inia monitoring alternative shall, at a iniaum, attlice inventory reconciliation, and ergound storage tank testing, and pipeline leak detectors. In addition, either vadose zone of ground water monitoring shall be included and soil sampling at the time of borings or well installation.

Inventory reconciliation shell be performed according to the procedures specified in Section 2644 of this Article. The owner or operator of an underground storage tank that experiences a variation in excess of any of the following shall implement the evaluation procedures specified in Section 2634 of

Article 3 within the times epecified.

(1) daily variation + 100 gallons

(11) 7-day variation + 5% of throughput ar 100

greater than 350 gallons

(111) greater than

15x of throughput or 100

30-day variation gellons whichever is greater

On Underground storage task testing shell be performed yearly in a publishing specifying to the procedures specified in Section 2643 of this Orticle.

(D) Oll preseurized pipelines and suction
problines shall be agained as provided for
in Subsection (d) of Subsection (5) of this
Subsection

- designed and installed coording to the procedures specified and Sections 2646 and 2648

  of this Article. The Transport of monitoring shall be based on the pumber and proximity of monitoring logations to the understound storage tank and type of sampling and analysis; powever, in no case shall monitoring be less arequent than semi-annually.
- designed and installed according to the

  designed and installed according to the

  procedures specified in Sections 2647 and 2648

  this Arriors. The minimum number of

  modificing wells shall be as specified in

  alternative no. 6 on Table 4.1. Analysis of

  samples collected can be by visual observation

  or field or laboratory analysis as determined

  by the local agency depending on the

  constituents being evaluated. Ground water

  samples shall be collected and analyzed at

  least semi-annually.
- (G) The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this Article. Samples shall be taken from all borings and wells installed.

- (7) Underground Storage Tank Gauging and Testing
  - minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for ranks which do not normally have frequent inouts or withdrawals and where the liquid level in the rank can be measured to an accuracy of 5 gallons or less when the liquid is at the most ensitive measuring level in the underground storage tank.
  - (B) The underground storage tank gauging shall be performed according to the following apportications:
    - capable of being secured to prevent
      capable of inputs or withdrawals; and
    - taken by the beginning and end of consecutive periods, each lasting at least 5 days. No lasting or withdrawals shall occur during these periods. The liquid level measurement at the



(1) Whenever possible, a method of monitoring other
than ground water monitoring hall be performed
monthly at a minimum.

recharge area and the ground water has an actual or potential use (comestic, suricipal, agricultural, or industrial supply), a sonitoring method other than ground water monitoring shall be utilized on a monthly or more frequent basis for leak detection monitoring. Furthermore, ground water monitoring shall be malemented to these situations if ground water is less than 100 feet deep.

Authority WASC 25288.2 Reference: HASC 25284\_1



## 2642, 2641 Visual Monitoring

iean detection monitoring enall be utilized as the oriminal lean detection monitoring method, where feasible, for all or a portion of the exterior surfaces of an underground storage tank. All owners of existing underground tank owners shall implement visual monitoring for any exposed portion at an underground tank demonstrate to the local menory that at least one of the exemption criteria of subsection (b) of this section is applicable. If visual monitoring is to be implemented, then the photisions of subsections (c) and (d) of this section shall be followed.

10) If any one of the following conditions are met the owner is exempted from implementing visual monitoring for that portion to the tank upled the condition applies.

(1) In owner way be exempted from visually monitoring any pertion of an inderground storage tank that is no contact with the groung. Editate a floor or pad such that it connot be seen. A tank in a saddle should not voically qualify for an exemption.

(S) It the act of Arabally suspection the extension of

performed by the same persoc.

the procedures specified in Section 2043 of this Article.

(8) Interim Alternate Monitoryna

minimum, utilize underground storage tank

tasking and either inventory reconciliation or
tank assigns. This Paternative shall only be
used by any of the following catagories of
owners far a period of up to 3 years after the
effective date of these regulations.

Subsection 11342(e) of the Government Code,
non-profit organizations which would meet the
Owderia for a smell business, provided the
Owner of the small business demonstrates to
the local agency that sufficient funds will be
available to properly close the underground
atorage tank pursuant to this article or to
implement one of the first 7 monitoring

alternatives within the three year period; or

provides a written commitment to the local agency that the underground storage tank will be closed according to the procedures specified in Article 7 within 1 years (following closure, the underground storage tank can be replaced with a new underground storage tank complying with the provisions of. Article 4 of this Subchapter) The local agency shell not issue a permit allowing this sonitoring alternative for longer than three years and shall not renew the pecuit.

descriptional time to implement one of the first 7 monitoring alternatives. The local agency shall not issue a permit allowing this monitoring alternative for longer than 3 years and shall not renew the permit.

(d) The local agencies shall evaluate each monitoring

alternative proposed to determine if it achieves the

objectives specified in Subsection (b) of Section 2640

- the underground storage tank would gut a person in a physically unsafe government.
- if a person would be required to the personal protection equipment (other than normal protection equipment (other than normal protection equipment, such as steelinged-endes, here the protection, etc. 1 in order to visually inspect the entire of the underground storage latic
- (4) If the underground storage table is located at a facility which is not staffed on a gally passa.
- ich 8 visual monitories program shall incorporate all of the

forlesings

- cel destate routine monitoring procedure shell be prepared and be evaluable at the facility which includes the frequency of visual inspections, the localitopist from which observerations will be made. The name(a) or title(s) of the person(s) responsible for performing the observations, and

the reporting format.

- (3) Visual inspections soail be performed daily at a minimum, and shall be hole frequent it necessars. The inspection schedule shall be established such that inspections occur on a routing basis of least ene trapection anall to performed when the vicate level in the underground storage tank is at its nighest. The inspecting frequency shall be selected such that any unauthor and release will remain observable on the exterior of or the surface immediately peneath the underground storage tank between visual inspect one The evaluation of how long the hazardous substance remains observable shall consider the youatlinty of the hazardous substance and the porosity and slape of the surface immediately beneath the unperground storage tank or portion thereof being visually monitored.
- end the liquid level in the tank at the time of the
- (d) The appearation of any liquit on the extensor of or the surface immediately beneath the underground storage tank penns visually populated shall cause the owner or operator to implement all or a portion of the following

agricons. The applicable actions and their timing small be passed on the sitemassize situations shall be intended to determine if the objective liquid constitutes an unautopolized releases and small be included in the permit.

Aiguid.

- the procedures described to section 2643 2862 of the Article.
- (3) Removing all hearngous substances from the underground storage target
- (e) Visual monitor on of the extessed portion of a partially concealed tank shall not release an owner from implementing contions on the current portion of the tank using a tree extern recalleng alternative specified returns described in Section 2641 this Orticle.

Authority: HESC asded. ... Reference: HESC ababy 1, 25234.2 Adont new section to read

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2643. 2642 Oppoenditioned Stocage Tank Testing

- The Same sections (b) (st things (t) Fix of this section (b) at this section (b) at this section implement a testing broader to the same of this section of this section which abscribes tenk testing section (c) this section which abscribes tenk testing section (c) this section which abscribes tenk testing section (c) this section of this section (c) this section (c) this section (c) this section.

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  This sec
- Testing pregram it that can emperate to the introductions and interest to the interest of the following the trailing of the following the followin
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- wethod capable of meterting a release of a nesergous

  method capable of meterting a release of a nesergous

nour (goh) or less. These wethods are limited to those tests that make adjustments for all of the following, if applicable:

(1) the presence of Mager pockets

#100a\* #UTCU TUCINGS WAX GAUSTEX CONSIDERS:

FIGURE: E-DELESTON OF CONFLECTION OF FIR DESIGNAR

(3) temperature stratification in the tanks

(4) evapora (10)

(5) pressure valuations in the tank. acc

16 geffection of the tank ends.

Sesting of Pidetices which have been isolated may
uthlike a hydrostatic pressure test in lieu of the test
reduired to Subsection (b) of this Section. This
hydraptatic pressure test shall be conducted at a
pressure drop of more than 50 psi (2600 mm Hg) per minute
indicates a leaking pipeline. A pressure drop of less
than 5 psi (260 mm Hg) but greater then sero is
inconclusive and a test pursuent to Subsection (b) of

this Section shall be performed. The test shall be performed for at least five manutes.

personnel who have received training in appropriate that
procedures. The person performing the test small
certify that the test procedure utilized Years into
account the variables specified in Subsection (b) of
this Section and is capable of measuring leaks of 0.05
quilous per hour or less. Additionally, within one year
after the development of a listing or certification
procedure for this type of test, only listed or
certified tests shall be accounted.

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- supportant of the completion of the last detection for principal and the section of the last detection for principal states and the section of the last detection of the last de
  - the procedure used including and deviations from some procedure marafacturary for the less detection methods
  - The test results used to determining the volumetric
  - 13) The volumetric rate of product loss.
  - The information shall be presented in written and or tabular to mat as appropriate and shall be at a level of detail appropriate for the test procedure used. ...
- if) underground table which are found to lose troduct as a cate greater than or equal to but on shall be depaired on telleged as specified in Articles 6 and Z.

- The installs of any tests, other then these required by this Article, performed on the underground storage take at any steel interval to determine it the underground storage take generated to the tank of the ta
- containingflammable or combustible liquids shall not be pressure tested using air or other sees.
- presents 1682 titosticus of an anathrance attach; the moder con accepted to a states; the moder too accepted to a states; the moder con accepted to a states; the moder too accepted to a states; the moder con accepted to a states; the moder con accepted to a states; the states; the states; the states; the states; the states; the states accepted to a states; the states accepted to a states; the states accepted to a states; the states accepted to accepted to a states; the states accepted to a states; the states accepted to a states

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rence: H&SP =528 25284 1 25284.2

4.39

Adopt new section to read:

# 2644. 28#3 Inventory Reconciliation Eggitfol

- implementing a monitoring albernative in Section 2641 of
  this Article which specifies inventory reconciliation
  subject to this subshirter shall steept as provided for
  in subsections (b) of this section implement an
  inventory reconciliation control program as described in
  subsections (b) (s) through (c) of this section. This
  requirement may be transferred to the operator pursuant
  to provisions of Section 25284.2 of the Health and
  Safety Code.
- REGREGATERITA UNITARIO WEREITATE TO STRUBBEGG MATERIANO SURSTABLE TO WOR SARESPETRIE TO STRUBBEGG TI ANGLI ON STRUBELTING TO THE ISSUE STRUGG FROM THE SAUDRES LADO INDICATABLE OF TAXABLE CONTACT BLOCKER (B) GANDAL DE ETIERINE ANSELSCONUS STOLUSE TANKS SAG
- (b) (c) All tanks shall be individually monitored utilizing
  a dails inventory reconciliation defired system that
  takes into account: daily tank quantity measurements
  for both tank contents and any water layer; and, daily
  kepail meter readings for tank input and withdrawals.
  delivery records for estimated products and daily

Tank input meters shall be calibrated within the accuracy required for meters used for wholesale transactions in California. Meters for tank withdrawals shall be calibrated within the accuracy required for meters used for retail sales transactions in California. Meters shall be approved for use by the county Department of Weights and Measures or by a person licensed by the County Department of Meights and Measures.

- (e) For the purpose of this section, "daily" shall be

  defined as days during which inputs or withdrawers are

  made to or from the underground storage tank. This

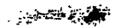
  shall be a minimum of 5 days per week. This minimum may

  be reduced for public holidays that fall on Monday

  through Friday provided no inputs or withdrawals are

  made on the holiday.
- (d) Tank quantity measurements shall be based on liquid elevation measurements which are:
  - A BUDUNTE OF MAUNITUR TO QUETETENTH OF WE INCH!
  - (1) 121 Performed during periods of no tank additions
    or withdrawals;

1-.



or tape gage measurements are used;

(4) 18) Capable of detecting a water layer at the lowest end of the tank, it possible,

of the tank if access is available or measured at the lowest and of the tank with initial measurements at boyn ends if possible, to determine it any tank tilt exists and, if so, its meanitude; and

(6) 171 Converted to volume measurements based on a calibration wart provided by the tank manufacturer or supplier. This chart shall, if possible, take let account the actual tilt of the tank as determined initially as described in Subsection (6) above.

(e) tholesale meter deliveries delivery received shall be verified according to the following procedure which

utilizes the criteria described in Subsection (d) of this Section. All liquid level measurements, conversion to liquid volumes, and meter readings shall be recorded and maintained as part of the inventory reconcilization records.

(1) Prior to any delivery, the volume of actual tank
content shall be determined and if product is to
be removed from the tank during delivery, the
retail meter totalizer reading(1) shall be
recorded.

(2) Following a delivery the volume of the actual tank content shall be determined and, if product was removed from the tank during the delivery, the retail meter totalizer readings shall be recorded.

be made of the increase or decrease in the volume of water in the tank and the increase or decrease in the volume in the volume of praduct in the tank. This figure shall be compared with the metered volume of the product delivery. The volume shall be temperature corrected, if necessary.

(4) A difference of more than the greater lesser of

gallons shall be cause for a reevaluation of the measurements. This reevaluation shall initially include collection of the information required in Subsection (e)(2) of this section.

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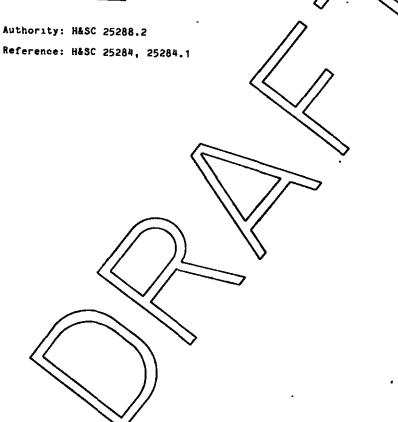
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She owner or operator shell, on a quarterly basis, submit a statement to the local agency, under penalty of perjury, that the person signing the statement has reviewed the inventory reconciliation data and that either: the data is within allowable variations, or a listing of the dates and variations that exceed the allowable.



2645. 2688 Soil Testing and Exploratory Bort

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Undistyred (intact) soil samples shall be recovered from all borings used for the implementation of vadose fan or ground water monitoring.

(e) Sold samples shall be taken at intervals of 5 feet or

less beginning at the ground surface, but sampling shall

not be required below the water table nor in unweathered

bedrock which has little or no primary permeability.

(d) A soil sample shall also be obtained at the termination

depth of a dry boring regardless of the spacing interval.

- do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water.
- (f) Borings shall be described in accordance with the provisions of Sections 2648(p) and (a) of this article.
- (g) Soil samples shall be of sufficient volume to perform
  the designated analyses theliding soil vapor and soil
  extract analyses and to provide reprinate analyses, if
  specified.
- (h) If more than one booking is utilized, composite samples consisting of material from the same depth from each boring may be used for laboratory analysis if such samples can be made without loss of constituents prior to analysis.
- Samples shall be prepared, stored, and transported by appropriate EPA methods or other similar or superior methods approved by the local agency.
- (1) Samples shall be analyzed by field or laboratory methods

that provide quantitative results. EPA-approved methods or other methods of similar or superior precision and accuracy that are approved by the local agency shall be used.

persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then analysis shall be for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents.

(1) IBJ Seaples may be sperred in any order of depth( If lovels of hazardous substances known or suspected to have been be contained in the underground storage tank are detected at concentrations in excess of (above background concentrations if the constituent occurs naturally at the site then further soils shalfsis is not necessary persuant to this subsection( Noveter( the following shallsishing settions will be required (if the hazardous substance(s) shall will be assumed to have orthinated from the underground storage tank. Sind A permit shall not be granted unless A permit shall not be granted unless A permit shall not be granted investigation clearly

establishes that the underground storage tank is not the source of the hazardous substance, or that the tank is been properly repaired since the unauthorized release, and that any subsequent unauthorized release from the tank can be detected despite adequately montared aith the presence of the hazardous substance already in the environment.

13267(b) and 1330H of the Ealifoxies yaver code

13267(b) and 1330H of the Ealifoxies yaver code

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acti samples and/of ground waver sampling and

analysis:

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Notes and Recolated Topics water tone shall be

release has occurred, the persistee shall report the release pursuant to Arricle 5 of this Subchapter and shall repair or abandon the underground storage tank pursuant to Arricle o or 7 of this Subchapter.

debected, an alternative leak detection monitoring

avstem shall be installed pursuant to Section 2641 of

this article. 268% of 2686 and an assarance monitoring

system shall be installed desorbing to Section 26871

Authority: M&SC 25288.2 Reference: H&SC 25284.1 Adopt new section to read:

2646. 24687 Maddes Tobs Beredriew Wholtschill

(b) (il torough (b) of this Section.

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(b) (c) Yedose some controlled that consist of yepot wonttoning. or other torse of yedose zone papitoning. or a Combinations of yest methods may be used.

(c) well for yapor monitoring shall be fully perforated except for that portion opposite a surface seal and that parties of the posses of a well where a plugged, blank section of casing is used as a free liquid trap.

The byween apparatus and depths of vadose some monatoring points shall be selected to as to give the salaret apparatus werning if any unauthorized release

from the underground storage tank.

- (e) Subsurface systems shall, if possible, be located within the backfill surrounding the tank. if possible
- (f) Vapor monitoring for underground storage tanks may be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible to detection:
  - for a specific site, it shall be demonstrated by an actual on-site demonstration, using an appropriate tracer substance, they vapor would actually be detected by the installed system.
    - placed relative to the tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil.
  - Vapor Vaporing wonitoring wells placed in the backfill shall be constructed so that any leakage that may pone at the horizontal interface between the backfill and natural soils soils can be dutacted in the vapor well.
- (g) Soil-pore liquid monitoring and other forms of the

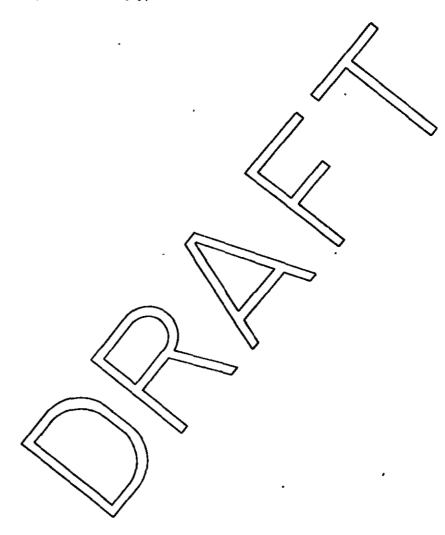
vadose zone monitoring may be approved if the discharger can clearly show that:

- (1) The stored substance is susceptible to detection by the proposed technique.
- (2) The stored substance will not attack the materials

  from which the detector system is constructed or
  otherwise render the detector system inoperable.
- (3) The site and soil characteristics will not prevent detection of an unauthorized release by the monitoring space; daing a satisfact liquid manitoring space; daing a satisfact liquid
- providing early detection of tank leakage.
- (h) Borings mall be donoribed in accordance with the provisions of the Sections 2648(p) and (q) of this acticle.
- MNUME CONTINUES SOUTSOLING IN SUSTANSIAL SOUTSOLING SECUTIONS SOUTSOLING SECUTIONS SEC

Authority: H&SC 25288.2

Reference: H&SC 25284.1



**\***:

Adopt new Section to read:

2647. 28#8/ Ground Water Keak Bereeries Montoring

(a) All owners of existing underground storage tanks
implementing one of the monytoring alternatives in

Section 2641 of this Article which requires ground water
monitoring sabblest to this Sabbunapter shall except as
provided for in Sabbackton ind of this Section implement
a ground water leak detection monitoring system pursuant
to Subsections (b)(c) through (1) (f) of this Section.

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13) The proximity to physical obstacles prevent the

positioning and operation of drilling equipment within a norizontal alaxance of 80 feet from the tenks

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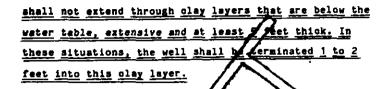
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- (b) All ground water monitoring wells shall be located as

  close as possible to be underground storage tank or the

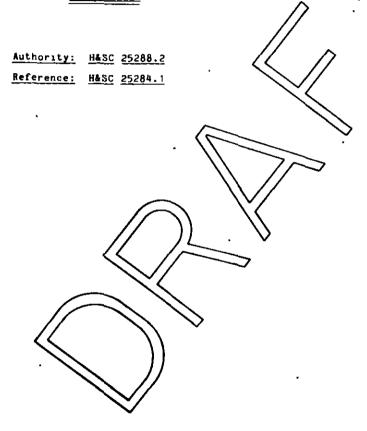
  perimeter of the tank cluster.
- feet below the lowest anticipated ground water level and at least 15 feet below the tank bottom. However, wells



- (d) Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point 5 feet above the bottom cap to a point 10 feet above the highest and respect around water level.
- (e) Ground water monitoring wells shall be constructed as filter-packet wells that will proved the migration of the natural soil into the well and with factory perforated scheens that are sized to prevent migration of filter material into the well.
- (f) | well casings shall have a hottom cap or plug.
- (g) Kilter packs shall extend 2 feet above the top of the perforage zone.
- (h) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter (ID) of 2 inotes which is installed in a boring whose diameter is at least 4 inches greater than the outside diameter (OD) of the casings.

(1) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack.

(1) Borings shall be described in accordance with the provisions of Sections 2648 (p) and (q) or this Article. 11.



Adopt new Section to read:

28471 RESULTANCE Ground Marer Monitoring

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Authority: H&SC 25288.2 Reference: H&SC 25284.1 Adopt new Section to read:

# 2648. General Wall Construction and Sampling Methods

- (a) Soil and water The sampling equipment and paterials used to construct a well shall be compatible with the stored hazardous substance product and shall not donate, capture, mask, nor alter the product constituents for which analyses will be made.
- (b) Representative samples of all imported saterials used

  for filter to gratel packs or Macketill salls and to

  construct form seals shall be evaluated today to

  determine their acceptability with regard to Subsection

  (a) of this Section.
- (c) All drilling tools shall be thoroughly cleaned

  immediately before a boring is sharted. And immediately

  array a mouse is completed.
- (d) All well easings desing fittings, screens gravel packs
  and all other components that are installed in the well
  shall ze be thoroughly cleaned before installation in
  the boring.
- (e) All soil and water samplers shall be cleaned before each sample is taken.

- non-hazardous materials which conform to the provisions of Subsection (a) of this Section. It additives used and the depth in which they were used shall are to be precisely recorded precisely in the boring log.
- (g) Representative samples of additives, cement, bentonite, and filter media grants shall be retained for 90 days for possible analysis analysis for contaminating or interfering constituents.
- THE ALL MALL CONTACT WATE A MOUNTON CAN OF PERSON
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  TIL MESTS RHOTS AND OF SALLNES SENTS GLORUS WEEDS.
- (h) All ground water monitoring wells shall be properly approprietely developed until the discharge water contains less than 10 ppm solids.
- (1) Well heads shall be provided with a Kadking water tight cap.

- structure that will protect the well from the entry of surface water, accidental damage, unauthorized access and vandalism. This may be accomplished by providing a locked well cap or by wells within a secure facility.
- (k) fail Pertinent well information including well
  identification, well type, well death, befine and well
  casing diameters if more than one size is used, and
  perforated depths shall be permanently affixed to the
  interior of the surface security structure and the well
  identification number and well type shall be affixed on
  the exterior of the surface security structure.
- TRUER AND TILER MARCH!

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  JUINTAIN POLINES OF HOIIN TO SPENDED THE SHE SECTION TO
- than 5 feet below the bottom of the underground storage tags and which are above any free water zones shall be required at the descretion of the local agency on a site-specific pais.

- (m) Surface seals for vapor wells that are completed in or below a free water zone shall be required but shall not extend below the top of the tank.
- (n) Vapor wells constructed wholly within the bacfill that
  surrounds the underground storage tank and which extends
  to the ground surface need to be sealed against
  infiltration of surface water.
- (o) Surface seals for other types of vadose zone installations shall be required on a case-by-case basis.
- and the ground portion of fr. the highest anticipated ground water level and elisting ground water level shall be retermined. Historic high ground water level shall be determined by a review of all water level shall resourcements on record for wells within 5 miles of the site. Friating site ground water levels shall be established by either water level measurements taken within the last 2 years in all, but not less than 3, existing wells within 500 feet of the facility which are perforated in the zone of interest or by drillingat least one exporatory boring constructed as follows:

The exploratory boring shall be drilled downgradient if possible and as near as possible to

- the tank, but no further than 500 feet from the tank.
- (2) The exploratory boring may be of any diameter capable of allowing the detection of first water
- (3) The exploratory boring shall be drived to first

  purennial ground water, or to a minimum depth of

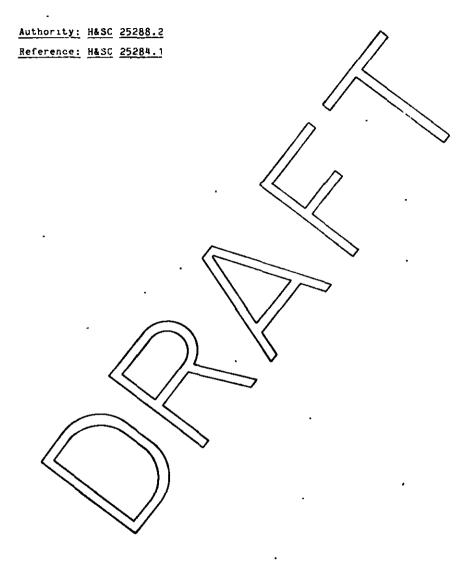
  100 feet for Alternatives 2, 3, 5, and 6 or to a

  minimum depth of 30 feet for Alternative 4.
- (4) If ground water is encountered, the boxing shall be converted to a groupd water monitoring well consistent with the provisions of Sections 2647 and 2648 of this Article.
- (5) If the exploratory boring does not encounter ground water, it shall be sealed in accordance with the provisions of section 2040(s) and (n).
- (q) All forings that are not used for ground water or vadose

  zone monitoiring shall be sealed from the ground surface

  to the bottom of the boring with bentonite grout.
- (r) All borings that are converted to vadose zone monitoring
  wells in which the monitored interval is shallower than
  the total depth of the boring shall have the portion of

- the boring which below the monitored interval sealed with bentonite grout.
- (s) All slurry-type grounts used to the mean boring or for well seals shall be emplaced by the tremts bethod.
- Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is pegistered or certified by the State of California and who is experienced in the use of the Unified Soil Classification system. A technician brained and experienced in the use of the Unified Soil Classification system. A technician brained apprecianced in the use of the Unified Soil Classification system who is working under the direct supervision of one of the aforementioned professionals shall be deemed qualified to log borings, revided the aforementioned professional reviews the logs and accuracy and applements of ballogs.
- (u) 411 web senes above the free water zone shall be noted
  - If evidence of contamination is detected by sight,
    smell, or other field analytical method, drilling shall
    be halted until the responsible professional determines
    if drilling deeper is advisable.



Article 5. Release Reporting Requirements

HOOPE NEW ESCREAD ED REEDE

2650 Applicability

(a) All unauthorized releases from the primary or secondary container disk mids the shall be reported respirated - eccording to the distinct and distinct requirements of Sections 25284.3 and 25283.1 of the Health and Safety Code and this Article. Saddien

Lentern unauthorized releases to secondary containers.

as described in Section 2525-1 of the Health and Sefety
Code, shall be recorded on the operator's monitoring
reports according to better 2651 of this Orticle. No
other peopre shall be required if the less detection
monitoring system in the sears between the primary and
fecundary containers can be reactivated within 8 hours.

This provision shall be applicable only to new
this Sebchaptern

THERMIX OF THE LATERANT INTO TATER CORLINER TOR DESCRIPTION ON THE ENGINEE TO CONTRACTORS MOST WHE OFFER OR BUT TINESS OF LABORITUS IN STREET THE THE SAN BLUMBS GIT NOTHERNCTIANS CRIMMERS SHOTT BE LADDELEGY. INC DEFRICE CABELTS OLS MELIUMS IN SECTION SMET OF ENTE SCRISTIFY WITH LEDBELTING ROBDISTER OF BELL OF MOTHER CONTING CONTING COLUMN COLUMN

(c) (d) All other unauthorized recesses remaining immediate reported whell be reported within 24 hours after the release has been, or should have been, detected according to are defined in Section 2652 of this Article.

Authority: H&SC 25288.2
Reference: H&SC 25284.3, 25284

Adopt new section to read:

2611. Uneusbactury Extense Requiring Expecting

- (a) The report required by Subsection (b) ( Section 2000 of this Article shall include:
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- (1) List of type, quentities, and concentrative of hazarous substance released.
- (3) Method of Glean-up, and Cost
- Meste meditatis; it nighted:

  (3) Method end location of disched Caby of Ddyschooks

  (3) Method end location of disched Caby of Ddyschooks
- (4) Method of future lask presention or repair. If this involves a change as defined in Article 10. Section 2712, 2702 Subjection (a) of this Subchipter, then appropriate reports pursuant to that Article shall also be filed.
- Detrock the primary container is to continue to be used.

  Detrock the primary and secondary container les

  Deen rejetivated.
  - Sacitate operator's name and telephone number.
- 17). The estimated cost for cleaning to be submitted

# yoluntarily.

the local agency shall review the latermation and shall review the permit and may imaged the underground storage tank pursuant to the provisions of Article 10. Section 2712. 270s subsections (a) and the of this Subchapter. The local agency shall find that the containment and monitoring standards of Article 3 of this subchapter can contains to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow completees with the standards.

(c) (d) Deterioration of the secondary container is likely when any of the following conditions exist:

integrate on the stored hazardous

paragone emparence could demane the secondary
(S) The mechanical means used to clean-up the released

the primary container, are added to the secondary

container for treatment or neutralization of the released hezardous supstance as part of the cleanup process.

reportable unauthorized release bacowes a reportable unauthorized release lead-due to initially unauthorized facts, the release hall immediately se treated as a reportable release pursuent to Section 2652 of this Orticle.

Authority: H&SC 25288.2
Reference: H&SC 25284.3

ChSQ - deauthorized Releases Requiring Innetitate Report to

- int other uponthurized releases which are described by extreme Subsection and in Subsection of this Section.

  In addition the reduirements of Subsections (c)( (d)( end (d) (d)) (d) (d)( end (d)) (d)
  - TIL O CONCERNS ENGINEERING CELEGISE STREET AND STREET OF ANY STREET STREET STREET STREET STREET
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- (b) Oll enemphorized releded medical the criteria of
  Sapsaction (4) of this saction shall be seened within
  24 hours after the release has been detected on should
  have been detected, the operator of certified shall
  notify the local agency, and the State Office of
  Emergency Services or the and regional board Residual
  Mater Saality Control Board
- eccurrence the operator or permitter shall submit to the local agency a full written rappy to include all of the following information which is aroun at the time of filing the rapport!
  - (1) List of type, quantity, and concentration of
  - I've results of all investigations completed at that time to determine the extent of soil or ground .

    The results of all investigations completed at that

    time to determine the extent of soil or ground .

    The release

- (3) Method of cleantup implemented to-date. proposed cleantup actions and approximate cost. and proposed
- (4) Method and location of disposal of the released perand water or surface water (include whether a contaminated water and any contaminated whether a

Proposed mather of regain or replacement of the primary and secondary containers. If this involves than as defined in Subsection 2712(a) 2702/47 of Article 10. Spen appropriate reports pursuant to that article small size by filed.

(6) Eachlity dose for's name and telephone number.

(d) Until clean-up is complete, the operator or permittee shall submit reports every 3 months or at a more frequent interval specified by a responsible assert the letal assert or Residual Board to the local assert and the residual board. The reports shall include the information requested in Subsections (c)(2), (2), (2), and (c)(4) of this Section.

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del its The reporting requirements of this section are in addition to any reporting requirements specified by Section 13271 of the West Code and other laws and regulations.

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Authority: H&SC 25288.2 Reference: H&SC 25284.4 Article 6. Allowable Repairs

Adopt new section to read:

2660. Applicability

- (a) This article describes the conditions which must be made to allow primary container redains of underground storage tanks containing motor valuable fuel not under pressure, to allow the use at previor coating of hazardous substance storage tanks in order to repair the tank, the required repair methodology and the required tank testing following require.
- (b) Section 2661 lists by required evaluations which must be completed in order to allow the remain of a primary container. A satisfactory demonstration of each part of Section 2661 shall be made prior to approval by the local approval a
  - must be natified to ape totalion costing assess aprep
  - Container repair. Subsections (a) and (b) describe the Section 4003 (lists the required primary container.

monitoring which shall be performed prior to placing the nudendudnúd stoudes zeuf pack fü sankicer Authority: H&SC 25288.2 Reference: H&SC 25284.4

#### SSSIL Repair Evaluation

- the evaluations described in Subsections in through to of this Section wast be completed before a primary container repair can be authorized by the local agency.

  Aligned Earlung to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below shall be adequate rationale for a local agency to deny the proposed repair.
- ib) It shall be determined if the failure memberism is isolated to the actual failure or as affecting other areas of the tank or if any other failure mechanism is affecting the primary container.
- ich if interior linion is the proceed repair method, a demonstration that the actual failure may not have resulted from any one or more of the following conditions shall be made:

(1) linear split of wore than three (3) loches:

end obsides with a dismeter of scenter than pos

(3) wore than ten (10) small perforations, or.

# adam on mail.

- (d) If interior ining or glate replacement of a steel tank

  is the eroposed repair method, then it shall be

  demonstrated to the satisfaction of the local agency

  based on an uitrasonic or comparable test that a serious

  corresion problem does not exist. If a serious

  corresion problem exists, an interior indicated may

  be allowed by the local sample if it can be demonstrated

  that new or additional correction brotestion will

  significantly minimize the corresion and that the

  existing corrusion problem does not increated the

  structural integrity or containment ability of the tank.
- (e) If interior linium is the proposed repair method, then
  it shall be demonstrated that the primary container has
  never been sepaired dains an interior linium.

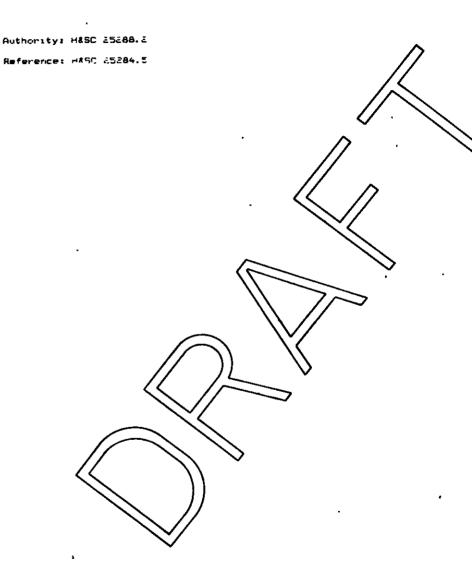
Authority: 4890 25284. 2 Reference: 4890 25284. 5

6.3

Adon rew section to read:

#### 2652. Repear Methodology

- ie. If a tenk repair is approved based on satisfactory demonstration of the issues raised in Section 2661, then the repair must be accomplished according to the applicable Subsections of this Section.
- If interior costing is the method of receive the material used in the repair shall be applied to accordance with nationally recognized engineering practices. An example of two bractice is the American Petroleum Institute's recommended practice No. 1631.
- the repair meterial and my addesive used shall be compatible with the existing tank materials and stail not be subject to deterioration due to contact with the bazardous substable bring stored.
- In remain material and lights process shall be listed or centified by a nationally recognized independent testing organization. The requirement shall become effective 1 year effor the effectivedets of these resulations of lyper effor a listing or certification procedure is available.

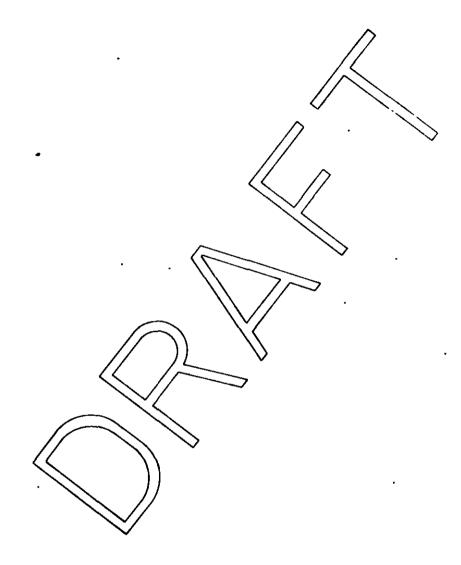


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#### Article 7. Closure Requirements

Adopt new Section to read:

#### 2670. Applicability

- (a) This Article defines temporary and permanent cloude and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.
- (b) The temporary closure requirements of Section 2671 shall apply to those bridgeround storage wanks in which the storage of herardous maters substances satterfals has ceased but where the tark owner or operator proposes to retain the ability to use the tank within two years for the storage of hazardous substances. satterfals Section 2871 does not apply to tanks that are empty as a result of the sitheraust of all stored material during normal appropriate prior to the planned input of additional hazardous substances satterfal consistent with cermit conditions.
- apple to those underground storage tanks in which the

  storage of hazardous substances maxefield has ceased and
  where the owner or operator has no intent within the

- (d) The requirements of this Article do not apply to those underground storage tanks in which has rious substances materials are continued to be stored even though there is no use being made of the stored substance. Material In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this Subchapter shall contained to apply.
- (e) During the period of time between cessation of hazardous substance safer storage and actual completion of underground storage tank closure pursuant to Sections 2671 or 2672, the applicable containment and monitoring requirements of Akticles 3 or 4 of this SubChapter shall continue to apply.
- AZ ZEASY PE ATT PRIOR to closure, dessation of storage

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  The underground storage tank owner shall submit to the

  local agency a proposal describing how the owner intends

  to comply with Section 2671 or 2672 of this Article, as

  appropriate. The requirement for prior submittel is

  waived if the storage of hazardous substances ceases as

a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release. In this situation, the underground storage tank owner shall submit the required proposal within 14 days of the discovery of an unauthorized release or against the prevent or minimize its effects.

- unauthorized release do not qualify for femporary
  cosure pursuant to Section 26N of this Article until
  the tank owner demonstrates to the local agency's
  satisfaction that appropriate authorized repairs have
  been made which that yours allow the underground storage
  tank to be capable of storing hardons substances
  makerials pursuant to the permit assued by the local
  agency.
- (h) Underground storage tanks that have experienced an unauthorized rejease and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 of this Subchapter.

Authority: H&SC 25288 2 Reference: H&SC 25286 Adopt new Section to read:

# 2t71. Temporary Closure

- (a) This Section applies to those underground storage tanks

  in which storage has ceased but where the owner or

  operator proposes to retain the ability to use the

  underground storage tank within two years for the

  storage of hazardous substances
- (b) The owner or operator shall comply and al' of the following.
  - (1) All residual liquid, solids, or sludges shall be removed and handled hursuant to the applicable provisions of Chapter 5.5 of Division 20 of the Health and Selety Code. At 16116461
    - PROGREE TERRETS STOLON TOL LATALS AND OL
    - (B) paterioga abere + Indulia Lectores or elebones
  - (2) If the interground storage tank contained a hazacopus substance that could produce flammable vapors at standard temperature and pressure, then

the underground storage tank, either in part or as a whole, shall be sompletely purged of the flammable vapors to levels that would preclude on explosion or such lower levely as may be required by the local agency.

- (3) The underground storage tank may be filled at a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and results submitted to the legal agency prior to its being removed from the underground storage tank at the end of the temporary closure period.
- (4) Except for requires venting, all fill and access
  locations and piping shall be sealed utilizing
  locked caps or concrete plugs.
- Power service shall be disconnected from all pumps associated with the use of the underground storage tank except if the pump services some other equipment which is not being closed.
- andified or eliminated during the temporary closure
  period by the local agency. The local agency shall
  bonaider, in making the above decision, the need to
  maintain monitoring in order to detect unauthorized

releases that may have occurred during the time the underground storage tank was used but that have not yet reached the monitoring locations and been detected.

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- (d) The underground storage tank shall be inspected at least once every three months to assure that the temporary closure actions are still in place. This shall include:
  - (1) Visual inspection of all locked caps and concrete
  - shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to subsection (b)(3) of this Section.

Authority: H&SC 25288.2

#### Adopt new Section to read:

## 2672. Permanent Closure Requirements

- shall comply with either Subsection (b) for underground
  storage tank system removal or Subsection (c) for
  closure in-place. It is not exsential that all portions
  of an underground storage tank system to permanently
  closed in the same manner; however, and actions shall
  comply with the appropriate Subsection. Subsection (d)
  regarding no discharge demonstration applies to all
  underground storage tanks subject to permanent closure.
- (b) Removal of underground storage tanks shall comply with applicable provisions of drapper 6.5 of Division 20 of the Health and Safety Code in addition to the following: Subjections (1) and 12) and situer subjections (1) and spreopriate

rambued. and assailed as follows:

IA) product & legally stored for future use or

(B) NAMES HANDS + LOGALLY PRESERVED OF GISPOSES

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- (2) If the underground storage tank contained a hazardous substance material that could produce flammable vapors at standard temperature and pressure, then the underground storage tank of the in part or as a whole, shall be famplately purged of the flammable vapors to levels that would preclude explosion or such lower levels as may be required by the local agency.
- (3) When an underground storage tank or any part of an underground storage tank is to be disposed of, KMAX is deskined for disposed such as Marardons wasted transported and disposed of as Marardons wasted.

  The tank system of any part of the tank system may be mandied transported or disposed as a manual document to the local agency that proper disposal has been completed.
- (4) An owner of an underground storage tank or any part
  of an underground storage tank that is destined for
  a specific reuse shall identify to the local agency
  the fature underground storage tank owner,
  operator, location of use, and nature of use.

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- (5) An owner of an underground storage tank or any part of
  an underground aboutge tank that is destined for reuse
  as scrap material shall identify this reuse to the local
  agency: Party sixu the of the fellesting meters the
  underground exerage tank by any part of the inderground
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  subsection (myth) of this Sections
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- (C) Apply appropriate narrings to the tanks
- (c) Closure of underground storage tanks in place shall comply with the applicable provisions of Shapter 6.5 of Division 20 of the Health and Safety Gode, in addition to all of the following:
  - (1) All residual liquid solids, or sludges shall be removed. and Manales as follows:
    - HANAZAN NY REGATTY ANDREW TOV THENTO WER OF
    - OI MACAPARTA MANTE TABBLET PARTELES OF ALSBORDS
    - All piping associated with the tank shall be removed Associated with the tank shall be removed Associated and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped. As a satisfied waster
    - The underground storage tank, except for the piping that is closed pursuant to Subsection (2) of this

Subsection, shall be completely filled with an inert solid that cannot be removed; such as said of concrete, unless the owner intends to use the tank for the storage of a nonhazardour substance which is compatible with the previous ase of the tank.

- (4) A notice shall be placed in the deed to the property. The notice shall describe the exact vertical and areal location of the closed tank, the hazardous substances it contained, and the closure method.
- (d) The owner of an understound storage tank being closed pursuant to this Section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration can be based on the engoing leak detection monitoring, verification ground water monitoring on soils sampling performed during or interested after closure activities.

If feasible, soil samples shall be taken and analyzed according to to following:

(1) If the underground storage tank or any portion
thereof is removed then soil samples from the soils
immediately beneath the removed portions shall be
taken. A separate sample shall be taken for every

- 200 square feet for tanks or every 20 lineal feet for piping, at a minimum.
- 12) If the underground storage tank or any portion thereof is not removed, then soils sampling pursuant to Section 2645 2848 of Article a shall be implemented, if feasible.
- (3) Soils shall be analyzed for all constituents of sentained in the previously stored hazardous substances and their breakdown or transformation products.
- (e) The detection of the unauthorized release shall require compliance with the reporting requirements of Article 5.

Authority: HASC 25288.

Article 8. Categorical and Site-Specific Variance Procedures

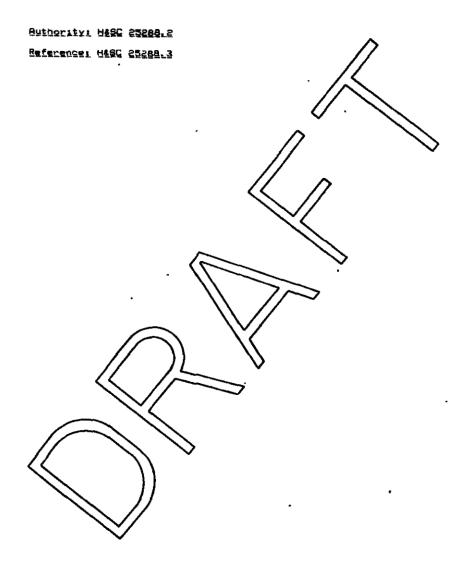
Adopt new section to read:

2680. Applicability

Interpretate sets up procedures for cetegorical and site-specific variances from the Health and Safety Code and Articles 3 and 4 of this Supposeter. A site-specific variance, if approved, would apply only to the specific site(s) approved for a variance. A categorical variance, if approved for a variance. A categorical variance, if approved for a variance. A categorical variance application shall include more than one site or shall be consiste specific. These procedures are in addition to those established by Sections 23286.3(a) and (c) of the Health and Safety Code.

10) Section foll appoints the procedures that must be followed by the applicant and the State Board for categorical variance requests.

Section and apprificating procedures that must personal by the applicant, local agency, and the removal board for site-apecific variance requests.



Adopt new section to read:

2681. Categorical Verlances

- 121 A categorical variance allows is an alternative method of construction or monitoring which is applicable to more than one local agency jurisdiction, site Application for a categorical variance shall be made by the permittee to the State Board on a form provided by the State Board.
- (b) Application for a categorical variance shall be made on a state application for artifical printer grate goars and small include, but not be limited to:
  - (1) Provision from which the variance is requested.
  - (2) Description of the proposed a vernative program, methods devices or process.
  - under which the vactors would eaply.
  - Clear and convincing evidence that the proposed elternative will adequately protect the soil and the perfectl uses of waters of the state from an unauthorized release.

- (6) A fee of 228/800 An initial payment of 11,000.
- 192 The applicant will be required to pay a tee based on the actual costs of considering the application. The State Board will bill the applicant for and tional enticipated costs, if necessary, before the public bearing and before preparation of a decision on the application.
- (d) (f) The State Board shall bettew all approcations appearited and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.
- (e) (a) The State Board that complete any documents

  necessary to satisfy the California Environmental

  Quality Het (Division 13, commencing with Section 21000,
  of the Public Gracures Code).
- appropriate regional board if it determines that the application to the application to the application to the application to the within Section 2682.

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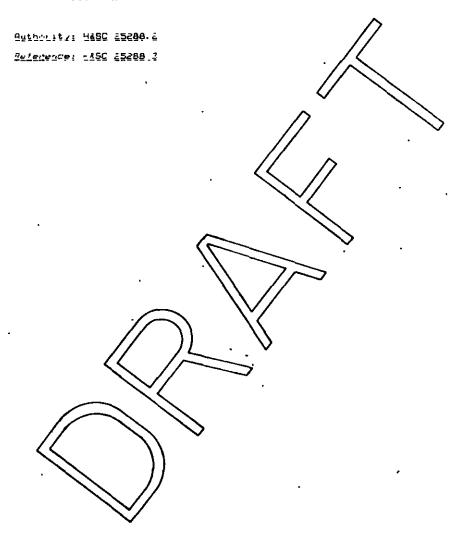
prescribe the conditions the applicant must meintain and will describe the appealing alternative for which the variance is being granted.

approved categorical variance shall attach a copy of the approved categorical variance shall attach a copy of the approved variance to the permit approach authoritied to the local agency. The local approx shall review the application and categorical variance to attermine if the variance applies to the specific life. If the variance applies, the local agency shall take a permit to the applicant which includes the conditions are applied by the State Board provided and other permit conditions are

Yerlance upon a linguist that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the State from an unauthorized release. The State Soard shall will not modify on revoke a categorical variance until it has followed procedures compared to those prescribed in this Section and Septembers 5 and 6 of this Chapter.

Additional mercur for appropriate of detailerical variance of the sections and septembers of a detail of a categorical variance of the sections and septembers of the sections.

which were based on the categorical variance.



Addes new section to need:

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- (a) 9 site:specific variance allows it in alternative method of construction or monitoring which would be applicable at one or more sites within one local enemy's site-agentic lariance shall be more by the permittee to the appropriate regional brand one form provided by the regional board.
- 10) At least 60 data erior to applying to the regional board, the permitte shall submit a symplete specific and monitoring plan to the local agency.

  The proposed elternature construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be recessor to reprove the specific methods, or if the local agency does not act within 60 days of its incept of the permittee's remplete construction and uppationing, the permittee may proceed with a variance application.

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- (c) (f) Application for a site-specific variance small be made on a state application for previded by the appropriate Regional Lours and small include, but not be limited Api

I Provision from mose the variance is requested.

The Detailed description of the complete cunstruction and northering methods to be used. The encaceed electrative proposes, method, device, or process shall be clearly identified.

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- TRESTITION OF PERMETATING SERVICES TO SERVE ATTITUDE TO BE REMETATING SERVICES OF SERVICE
- (3) Any special circumstance on which the applicant would rely to justify the findings necessary for the variance, as prescribed by Subsection (c) of Section 25288.3 of the Health and Safety Code.
- 14) That the proposed alternative will adequately protect the suit and the beneficial uses of waters of the state from an unauthodized release.
- One decements december to mattate the California commencing .

  Whith Decide 21000, of the Public Resources Codel.

- 161 9 fee of \$2,750 \$74720 for variance requests at one site. A fee of \$5,500 for variance request at more than one site within one local agency's jurisdiction.
- (d) (f) The regional board shall review all applycations submitted and shall notify the applicant to writing mithin 30 days of receipt of the applycation as to whether or not the application is complete.
- (e) /fil The regional board shall hold a healing on the . proposed alternative within 60 120 days after keceiving a complete variance applycation: however, the hearing shall be held after the 30 day period allowed by Subsection (c) of Section 25288.3 of the Health and Safety Code for local agencies to long in the application, described by subsection (d) of this section HAR EXEXUAL MOTICE OF THE HEAVING SHALL BE PROVIDED AT THANK TO MANS IN APPRICA TO SEN PARSON AND THEMSELS ERCH UNITED IN MARKINEY MORICE ENELL STED DE BLOTIGES to all differed lead energies and to any person known be interested in the proceedings. Ine votice anall effective the detay fine and jecation of the meatical and enall thelore a description of the occopance catagorical . SECTIONS AND THE TOTICE IS NOTIFED IT SECTION OF PLACES TO RUE DAVIET TE GERE TO GENEUES OF AND MENTIONS

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Upon a finding that the proposed allegative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release.

The regional board will not profess or revoke the verience until it has followed procedures comparable to those prescribed in this Section and Subchapters ind any serience until it has followed procedures comparable to those prescribed in this Section and Subchapters ind any serience of the modification or revokation. And small sections in the local seasons whall to modify the local parallel in modify the local seasons whall to modify or revoke the parallel for the local seasons whall to modify or revoke the

Authority: H&SC 2528.2 Reference H&SC 2528.3

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Article 9. Local Agency Additional Standards Request Procedures

Adopt new section to read:

2690. Applicability

(a) This Article sets up procedures for local agencies to request State Board authorization for more stringent standards than those set by Article 3 and 8 of this EME Subchapter. These procedures are in addition to those established by Subsection 25263.3(b) of the Health and Safety Code.

Authority: H&SC 25288

Reference: H&SC 25288.3

# Adopt new section to read:

2691. Additional Standards Request Procedures

- (a) Local agency application for additional standards shall include:
  - (1) Description of the proposed design and construction

    Standards which are in addition to those described
    in Article 3 of this Subchapter.
  - clear and convincing evidence that the additional standards are necessary. Clear and convincing evidence that the additional standards and would adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases.
    - Any documents required by the California

      Environmental Quality Act (Division 13, commencing

      with Section 21000) of the Public Resources Code.
  - A fee of \$114800 An initial fee of \$5,500.
- (b) The applicant will be required to pay a fee based on the actual costs of considering the application. The State bases will bill the applicant for additional anticipated costs, if necessary, before the public hearing and

# before preparation of a decision on the application.

(c) (b) The board will conduct an investigation and public hearing on the proposed standards and their need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implement additional standards. The debies and sther proceedural regardements contained in Sections (d) threaten (d) attricts of this subchapter shall applied

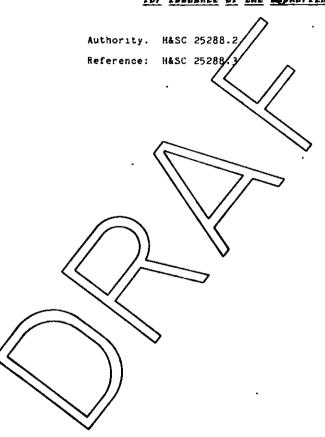
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authorization allowing the implementation of additional
standards if it finds that, based on new evidence, the
additional standards are not necessary to adequately

the state from unauthorized releases. The board will not modify or revoke the authorization until it has followed procedures comparable to those presented in Subchapters 1.5 and 6 or this Chapter. Editined Nerein



Article 10. Permit Application, Annual Report and Trade Secret Requirements

Adopt new section to read:

## 2710. Applicability

- (a) This Article describes spesific administrative actions that must be accomplished by all tank owners, local agencies, and the State Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by Sections 25283, 25283.1, 25283.2, 25283.4, 25283.5, 25283.6, and 25284.2 of the Health and Safety Code.
- (b) Section 2711 lists the information that must be y the tank owner to the local agency as part the permit application and the requirements for the local agency to seemit the permit application to the Board.
- eation 2N2 describes the conditions that local agencies must include in all permits issued and conditions, local agencies must meet prior to permit issuance.
- (d) Section 2713 describes the annual report requirements

# for both tank owners and local agencies.

(e) Section 2714 specifies conditions that must be met by a tank owner when requesting trade secret provisions for any information submitted to the local agency or State Board or regional board. It also specifies how the -local agency, the State Board, or regional board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

Authority: H&SC 25288.2

Reference: H&SC 25283, 25283.1, 25283.2, 25283.4, 25283.5,

25283.6, 25284.2

#### Adopt new section to read:

2711. Permit Application and Information

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- (a) (b) The permit application shall include, but not be limited to; the following information if it is accurately known to the permit applicant:
  - (1) The name and address of the person who fifth, estrocratical or public agency which owns the underground storage tank or tanks.
  - The name, location, mailing address, and phone numbershid 1166 of facility where the underground storage tank is located and type of business.
  - The name, address, and telephone numbers of the
     underground storage tank operator and 24-hour
     emergency contact person.

- (4) The name and telephone number of the person maring the application.
- description of the underground storage tank

  description including, but not limited to, tank and
  auxiliary equipment samufactures, year of
  manufacture, capacity, history of repairs, and
  operation methods schedule.
- (6) The samerglound storage tank (tank) piping and saxiliary equipment. Construction details of the underground storage tank and any auxiliary equipment including, but not limited to, type and thickness of secondary containment, type and thickness of secondary containment (if applicable), installation procedures and backfill, lining, wrapping, and cathodic protection methods (if applicable).
  - A diagram or design or as-built drawing which indicates the location of the underground storage tank (tank, piping, auxiliary equipment) with respect to buildings or other landmarks.
- (8) The description of the proposed monitoring program including, but not limited to, the following where applicable:

10.3

10.4

(A) visual;

(B) tank testing or inspection procedures;

gaging and reconciliation methods;

(D) soils sampling locations and methods and analysis procedures;

(E) vadose zone sampling locations and methods and analysis procedures;

(F) ground water well(s) locations, construction
and completion ethods, sampling, and analysis
procedures; and

(G) frequency and sensitivity of any monitoring method sensing instrument, or analytical method.

(9) A list of all the substances which previously,
currently, or are proposed to be stored in the
underground storage tank or tanks.

(10) If the owner or operator of the underground storage

tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the lank.

(11) The permit application must be signed by (A) a principal executive officer at the level of vice-president or by an authorized representative. The representative must be perponsible for the overell operation of the facility where the tank(s) are located, (B) a general partner proprietor, or (C) a principal executive officer ranking elected official, or authorized representative of a public agency.

(c) The application shall be accompanied by the a fee set by the local agency. The local agency and ressonable cours of permitting and responsible cours of surface the surface according annually by the lecturary of the cours of State Board in carrying our its responsibilities under these restricts.

Authority: H&SC 25288.2 Reference: H&SC 25283.2

### 2712. Permit Conditions

- (a) As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority within at least a days after prior to the usage of any underground storage tanks, including:
  - (1) the storage of new hazardous substances; or
  - (2) changes in hourtering procedure; or
  - (3) the replacement of repair of all or part of any underground storage task.
- (b) As condition of any permit to operate an underground storage tank the permittee shall report to the local agency any unauthorized release occurrences (as defined in acticle whithin the time frame specified in Subsections 2653(0) and (c)).

written records of all monitoring performed shall be
additioned by the operator for a period of at least 3
years from the date the monitoring was performed. This
shall include:

- (1) The date and time of all monitoring or sampling;
- (2) Monitoring equipment calibration and maintenance records;
- (3) The results of any visual observations;
- (4) The results of all sample analysis performed in the laboratory or in the Netd, including laboratory data sheets;
- (5) The logs of all readings of gages or other
  monitoring equipment, ground water elevations, or
  other test results; and
- (6) The person to of inventory readings and reconciliations.
- (d) A permit to operate issued by the local agency shall be effective for 5 years. A local agency shall not issue a permit to operate an underground storage tank until the local agency inspects the tank and determines that the tank complies with the provisions of these regulations.

  The tank owner shall apply for renewal at least 180 days prior to the expiration of the permit.

- (e) The local agency shall have 18 months after it

  establishes a program implementing this Subchapter to

  issue permits for all existing underground storage
  tanks.
- (f) [6] Permits may be transferred to new tank owners if the new tank owner does not change any conditions of the permit; and the transfer is registered with the local agency within 30 days of the change in ownership; by submittal of a resisted permit application are made to the information in the initial permit application due to the change in ownership. A local agency may review, modify, or terminate the transfer of the permit to operate the understound storage tank upon receiving the transfer request.
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- tank permit unless the underground storage tank has been inspected within the prior 3 years and the inspection revealed that the underground storage tank complies with Articles 3 or 4, as applicable of this Subchapter and with all existing permit conditions. The inspection shall be conducted as specified in Subsection (h) of this Section. If the inspection revealed noncompliance, then the local agency must verify by a follow-up inspection pursuant to Subsection (h) of this Section that all required corrections have been implemented.
- (h) The local agency shall inspect every underground storage
  tank within its jurisdiction at least once every 3
  years. The inspection which shall evaluate the items
  Nisten in Subdivision (i) of this Section may be
  performed by the local agency or by a special inspector

employed by the permit holder as required by the local agency, or both. If a special inspector conducts any or all of the inspection, a copy of the special inspector's report which may contain recommendations concerning the safe storage of hazardous substances agency at the same time as it is submitted to the permit holder. Any deficiencies or items of noncompliance found shall be addressed as described in Subsection (j) of this Section.

- (11) The balbone of the jubbertion described in suppersion
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- (1) 101 Within 30 days of receiving an inspection report
  from either the local agency or the special inspector,
  the permit holder shall file with the local agency a

modifications to the underground storage tank or to the monitoring plan needed to achieve compliance with eitrer Article 3 or Article 4 of this Subchapter, as appropriate, or the permit conditions. This plan and time schedule shall also implement all the recommendations of the special inspector. The local agency may exempt the implementation of any of the special inspector's recommendations based on a demonstration by the permit halter to the local agency's satisfaction that the failure to applement the recommendation will not cause an unauthorized release.

Authority: H&SC 25288.2

Reference: H&SC 25283, 25283.1, 25283.4, 25283.5 25284.2

10.11

Adopt new section to read:

# 2713. Annual Report

(a) The local agency shall notify the State Board of any changes in permits as defined in subsections (a) or (d) of Section 2712 of this Article of any unauthorized releases as defined in Article 2 annually on the State Board annual report forms or other mathods determined by the State Board. This information shall be submitted to the State Board by March 1 of tack year covering the prior calendar year.

Authority: H&SC 25288.2

Reference: H&SC 25283.2

Adopt new section to read:

### 2714. Trade Secret Provisions

- (a) Any person providing information in an application for a permit to operate an underground storage tank, or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:
  - (1) Which portions of the information submitted are actually a trade secrets.
  - (2) How long this information should be treated as confidential;
  - (3) Reasures that have been taken to protect this information as confidential; and
  - (4) A discussion of why this information is a trade
    secret including references to statutory and case
    law as appropriate.
- (b) If the local agency or the State Board or the regional

board determines that a request for confidentiality is clearly valit, the material will be given trade secret protection as discussed in Subsection (f) of this section.

- determines that the request for confidentiality is clearly frivilous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the lecal agency or the State Board or the regional board is restructed otherwise by a court within 10 days of the date of the letter.
- if the validity of the request for confidentiality reade

  secret is unclear, the local areacy or the State Board

  or the regional apard will inform the person claiming

  trade secrecy that the burden is on him to justify the

  claim. The applicant will be given a fixed period of

  time to submit such additional information as the local

  agency or the State Board or the regional board may

  request. The local agency or the State Board or the

  regional board shall then evaluate the request on the IM

  Whis basis of the definition of "trade secrets"

  contained in section 25283.6(a) of the Health and Safety

  Code and issue its decision. If the local agency or the

  State Board or the regional board determines that the

information is not a trade secret, it will act in accordance with Subsection (c) of this Section. Send a lexter to the applicant stating that the local state of the State Board of Regional Roard will treat the information as such unless the local agency of the State Poard of the Regional Board is instructed athernise by a centr within 10 days of the date of the letter:

- (e) 111 information received for which trade secrecy status

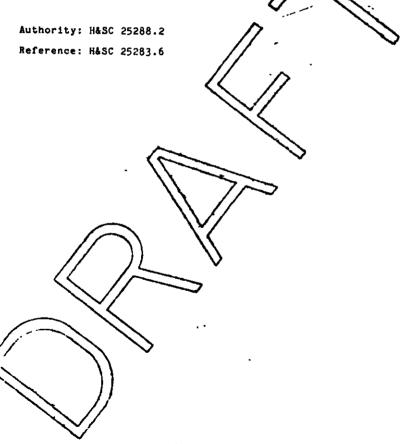
  is requested shall be treated as confidential as

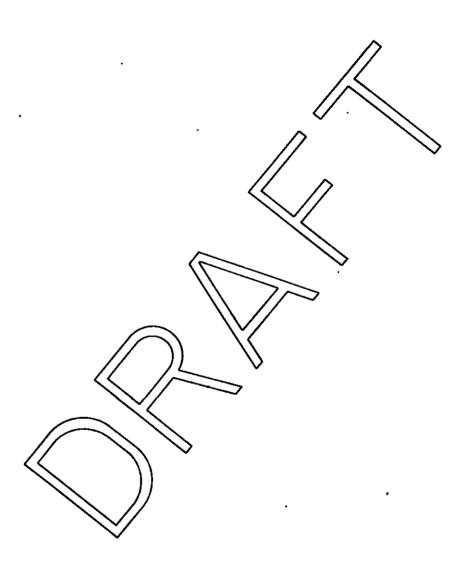
  fiscussed in Subsection (f) of this section until a

  final determination is made.
- information which has been found to be confidential, or regarding which a final determination has not been made, shall be immediately filed in a separate "confidential" i.le. If a document or portion of a document is filed in a confidential file, a notation should be filed with the remainder of the document indicating that further information is in the confidential file.
- information contained in confidential files shall unly indisclosed to authorized representatives of the applicant or other governmental agencies only in indication with the State Board's, the regional board's in local agency's responsibilities pursuant to Chapter in the Health and Safety Code or Division 7 of the

# Water Code.

(h) Nothing contained herein shall limit an applicant's right to surained herein shall limit an applicant's right to surained herein shall limit an applicant's fight to surained to other provisions of law.





5. Draft dated December 28, 1984

#### UNDERGROUND TANK REGULATIONS

# CALIFORNIA ADMINISTRATIVE CODE TITLE 23 WATERS CHAPTER 3 WATER RESOURCES CONTROL BOARD

SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

PROPOSED REGULATIONS, BASED ON COMMENTS FROM THE 15-DAY COMMENT PERIOD. (NEW TEXT IS DOUBLE-UNDERLINED; DELETED TEXT IS CROSSED OUT.)

# DECEMBER 28, 1984

Article 1	General
Article 2	Definition of Terms
Article 3	New Tank Construction and Monitoring Standards
Article 4	Existing Underground Storage Tank Monitoring Standards
Artičle 5	Release Reporting Requirements
Article 6	Allowable Repairs
Article 7	Closure Requirements
Article 8	Categorical and Site-Specific Variances
Article 9	Local Agency Additional Standards Request Frocadures
Article 10	Permit Application, Annual Report, and Trade
	Secret

### UNDERGROUND TANK REGULATIONS

# CALIFORNIA ADMINISTRATIVE CODE SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

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`	<b>\\</b>	

Adopt new section to read:

### 2610. Applicability

- protect waters of the State from discharges of hazardous substances from underground storage tanks.

  These regulations establish construction standards for new underground storage tanks, establish separate monitoring standards for new and existing underground storage tanks; establish separate reporting, repair, and closure pequirements; and specify variance request procedures.
- storing hazardous substances shall comply with these regulations except as provided in Section 2611 of this article. If the operator of the tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to: monitor the tank; maintain appropriate records, implement reporting procedures as required by the permit, and properly close the tank as required by the permit.

- Counties shall implement the regulations in this subchapter within both the incorporated and unincorporated areas of the county except as previded in Section 2811(4) of this Article of Article 8 and of this subchapter through the issuance of permits to underground storage tank owners. A permit may be issued for each underground storage tank, several underground storage tank, several underground storage tanks, or for a facility. A city may, by ordinance, assume the responsibility for implementing the provisions of this subchapter within its bourdaries.
- (d) All owners of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this subchapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued permits pursuant to increase the standards of Article 3 in lieu of the standards of Article 4 of this subchapter. In addition, all owners and/or operators of underground storage tanks subject to this subchapter must comply with the release reporting requirements of Article 5 of

this subchapter, the repair requirements of Article 6,
the closure requirements of Article 7 of this
subchapter, and the permit application requirements of
Article 10 of this subchapter.

Authority: Health and Safety Code (H&SC) 25288.2

Reference. Health and Safety Code (H&SC) 25282, 25283, 25288, 25288.2

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    - (A) Eno crdicarce, is it may be amorded, continues to acet, at a mirimum, the requirements of Article & and Article # of this subenapter or implements the requirements of Chapter 6.7 of Division 20 of the Health and Safety Code;

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wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the tink has been issued a hazardous waste

facilities permit for the underground storage tank
by the Department of Health Services pursuant to
Section 25200 of the Health and Safety Code or
granted interim status under Section 25200.5 of the
Health and Safety Code.

(b) Stydetures such as sumps, separators, storm drains, eatth basins, oil sield gathering lines, residery pipelines, lagoons, evaporation ponds, well sellars, separation sumps, lines and unlines pits, sumps and lagoons are not densidered urderground tarks for the purpose of these regulations. Sumps which are a part of a monitoring system required under Article 3 of this subchapter are not examples by this section, nowhere, these sumps would be considered part of the secondary container or leak detection system of the primary container and are would be required to meet the appropriate construction criteria.

Authority: H&SC 25288.2
Reference: H&SC 25280, 25288

artime 2. Pefinition of Permy

Adopt new section to read:

# 25.20. Applicability of Definitions

(.) Terms used in this proprieter shall have the definitions provided by Section 25280 the appropriate/section of Chapter 5./ of Division 20 of the dealth and Jafaty Code, or by Jestica 2021 of this artiste.

(b) Ine following terms are leftingd in the appropriate section of Chipter 5.7 of Division 29-Section 25/68 of the Health and Safety Code;

Board

Department

Facility

Hazardous substance

Local agency

Operator

Owner

Person

Pibe'

Primary Portainment

Product-tight Secondary containment Single-walled Special inspector Storage/store Unauthorized release Underground Storage tark Authority, MSC 170s8.6 Roferesce, USSC 15280, 15281, 20284

2.1

# 2621. 2620/ Additional Definitions

The following definitions shall apply to terms used in this subchapter.

# YBOArdy means the State Water Resources Control/Boards

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day.

"Double-walled tank" means a container with two complete shells which provide both primary and secondary containment. The outer shell must provide structural support and must be constructed primarily of non-earthen materials including, but not limited to, concrete, steel, and plastic.

"Existing underground storage tank" means any underground storage tank that is not a new underground storage tank. The term includes ary underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e. it had not been removed or completely filled with an inert solid. \*\*EMERGE\*\* SERVERSES\*\* AS SERVER

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"Menuture manufacturer" means the copiny enable processes the contilluent polynomy and membran siesting from while, the numbrare lines to fraprilated and system for sevendary containment.

"Membrane liner fibrigator" means the company which converts the liner membrane should have a system for secondary containment.

"Motor vehicle fuel tank" means a tank that contains a product
which is intended to be used primarily to fuel motor vehicles or
fuel an engine.

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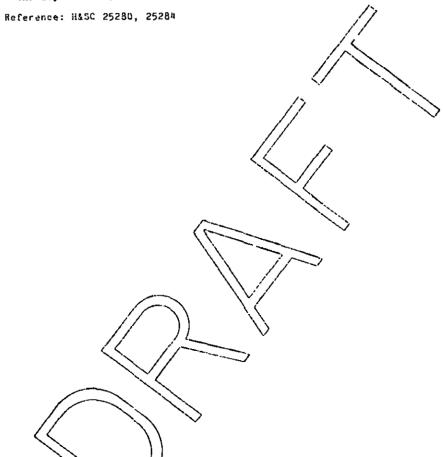
Authority 4450 05285.2° Reference 8480 05481, 25281, 2528 Prince of 3. New York Construction and Monitoring Standards

Adopt new seation to read.

### 2630. Applicability

- the construction, installation, and monitoring of sew underground storage lanks to broader hazardous substances.
- monitoring standards for all now underground storage tarks. systems New underground storage that only store motor vehicle fuels may be constructed and monitored pursuent to the standard, suggested in Sections 2633 in 1 2634 in lieu of those specified in Sections 2633 and 2612, respectively. However, if the construction standard, in Section 2633 must also be used.
- (3) All rew underground storage tanks and agriculary acritations rack systems must acouply with Section 2033.

Authority: H&SC 25288.2



Adopt new section to read:

2611. Construction Standards for New Underground Storage Tanks

- (a) Primary and secondary levels of containment shall be required for all new underground storage tanks been for the storage of hazardous substances as defined in Article 2.
- (b) All primary containers shall be product-Eight.
- (c) All secondary containers shall be constructed of materials of sufficient thickness, density, and composition to prevent structural meakening of the secondary container as a result of contact with any released hazardous substance and shull be capable of containing any unauthorized release of deviate the hazardous substance stored within the primary container(s) for a period of all least the maximum anticipated time period sufficient to allow detection and removal receivers of the unauthorized release. of leakage from the primary containers

(d) If a hazardous substance has come into contact with the

secondary container and either additional primary

containers exist within the secondary container on the

leaking primary container is repaired as specified in

Article b of this subchipter or closed as specified in

Article 7 of this subchipter and replaced by 2 new

primary container, the owner shall demonstrate to the

satisfaction of the local agency that the requirements

of Subsection (2) of this section are still achievable

or replace the secondary container.

- (e) 141 The secondary container shall have the ability to contain the following volumes:
  - (1) At least 100 percent of the volume of the primary container where only one primary container is within the secondary container:
  - (2) In the case of multiple primary containers within a single secondary container, the secondary container shall be larger enough to contain 150 percent of the volume of the largest primary container placed in it, or 10 percent of the aggregate internal volume of all primary containers in the secondary container, secret facility whichever is greater.

- to rainfall, then it the secondary container started facility is open to rainfall, then it the secondary container during a 24-hour.

  100-year storm in addition to the volume of hazardous substance storage required in Subsection (e) [all and [e]] of this section.
- space of a granular material placed in the a secondary container as which consists of the pore space in the a secondary container as which consists of the primary container shall be equal to or greater than 110 percent of that required in Sections (a) and (a) Subsection 2631(e) of this section. The available pore space in the secondary container backfill shall be intermined using appropriate engineering methods and safety factors and shall consider the specific retention and specific yield of the backfill material the location of the primary container within the secondary container, and the proposed method of operation for the secondary container.
- (h) The secondary container shall be equipped with a collection system dapable of removing to accumulate,

precipitation, subsurface infiltration, or hazardous substance released from the primary container.

(i) The floor of the secondary container shall be constructed on a firm base and, if necessary for monitoring, shall be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow removal of collected liquid The access casing shall extend to the ground surface, be perforated in the region of the sump, and covered with a locked waterproof cap. If this access casing he within a secured facility, the requirements for a locked cap may be waived by the local agency. The casing shall be thick enough to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.

Anars shall meet the following requirements:

(1) The memorane liner shall have a permeability factor

of 0.25 ounces per square foot per 24 hours or

less. Such permeability shall constitute the

maximum rate of transport over time of the

hazardous substance proposed for atorage. Permeability shall be evaluated according to accepted
engineering practices for materials testing.

Acceptable methods for determining the permeability
are provided in Appendix I.

(2) The membrane liner shall be considered to have satisfied the requirements of Subsection 2631(c) only if the liner material meats the following standards. The material properties specified in these standards shall be determined using accepted engineering practices for materials testing.

Acceptable methods for determining these properties are phoyided in Appendix I.

The volume swell after a 24-hour period of immersion in the stored hazardous substance shall not exceed 3 percent of the original liner membrane material thickness.

The maximum change in elongation of the liner membrane material at break after 24 hours of

undersica in the abores braidous substance and a mot exceed I percent of the anglest characters.

(brittlere w) after 24 hour of immersion in the harmdons substance shall be within a per cert of the original hardness.

through the liner membrane material of the hazardous substance after a period of 24 nours shall not exceed 6 percent by weight of the hazardous substance being tested. The riquid neight for the test shall be ro greater than that expected in setual site conductors.

material in the 'azerdous substance for a performal value of the him received on a performance of the section of liner bears beared.

tenorie strength of the parent miterial when tipted in the coordance with incorpted engineering printings for materials testing. Appendix are provided in Appendix I.

- (k) The liner shall be installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.
- (1) The excavation base and walls for the synthetic liner
  shall be prepared to the liner fabricator's
  specifications and shall be firm, smooth, and free of
  any sharp objects or protrusions.
- (m) 161 Laminated, coated, or clad materials shall be considered single walled and shall not be construed to fulfill the requirements of both primary and secondary containment.
- (n) (N) Double-walled underground storage tanks which
  satisfy the construction standard requirements of
  Sections 2631(b) and (c) of this article shall be
  corsidered to fulfill the volumetric requirements for
  secondary containment specified in Section 2631(e)(1) of
  this article. 2631(d)
- (o) The design of double-walled tanks shall allow for monitoling of the annular space.

- (p) "Sticking" the annular space of a double-walled
  underground storage tank as a monitoring method shall
  not be allowed unless a strike plate or other approved
  devices used to protect the underground storage tank are
  located directly under the monitoring opening.
- (q) The double-walled underground storage tank shall be so

  designed and installed that any loss of hazardous

  substance from the primary container will drain to a

  defilial specific location within the annular space, as

  required, to be detected by a monitoring device or

  method.
- inherent within the initial design of the primary container or double-walled tank shall be approved by a mationally recognized, independent testing organization or a demonstration of integrity with the primary sontainer or double-walled tank shall be required by the local agency.
- storage tanks subject to floatation shall be weighted or anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.



Adopt new section to read.

2632. Monitoring Standards for New Underground Storage Tanks

(a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this applicae.

subject to this section shall implement a monitoring program that is approved by the local agency and required in the permit. The program shall utilize one or more of the methods described in Subsection (c) of this section and shall address the items listed in Subsection (d) of this section.

Monitoring of the space between the primary and secondary contenter shall utilize either visual monitoring of the primary container as described in Subsection (1) of this subsection or one or more of the methods fisted in Subsection (2) of this subsection.

A program which relies on the visual monitoring of the primary container shall incorporate all of the following:

- underground storage tank and the surface of the underground storage tank and the surface of the floor directly beneath the underground storage tank shall be monitored by direct viewing.
- (B) Visual inspections shall be performed daily except on weekends and recognized state and/or federal holidays, and may be more frequent if designated required by the local agency. The local agency may reduce the frequency of visual monitoring at facilities where personnel are not normally present and inputs to and withdrawals from the underground storage tank are very infrequent. In these instances the minimum frequency shall be no less then once per week and shall take into account the minimum anticipated time which the secondary container is capable of containing any unauthorized release and the maximum leogth of time any hazardous substance released from the primary container will remain observable on the surface of the secondary container. The inspection schedule

shall be established such that inspections

occur on a routine basis when the liquid level
in the underground storage tank is at its
highest. The inspection frequency shall be
selected such that any unauthorized release
will remain observable on the exterior of or
the surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the
hazardous substance remains observable shall
consider the volatility of the hazardous
substance and the porosity and slope of the
surface immediately beneath the underground
storage tank.

- E) Recordation of the liquid level in the underground storage tank at the time of inspection.
- (D) The observation of any liquid on the exterior

  of or the surface immediately beneath the

  underground storage tank being visually

  monitored shall cause the owner or operator to

  implement all or a portion of the following

  actions. The applicable actions and their

situation and be intended to determine if the observed liquid constitutes an unauthorized release; and shall be included in the permit.

(1) Laboratory or field analysis of the conserved liquid.

(ii) Testing of the underground storage tank utilizing the procedures described in Section 26#3 of Article # of this Supchapter.

from the underground storage tank and the secondary container. The specifical AMBREST TOR 744 of this Sections.

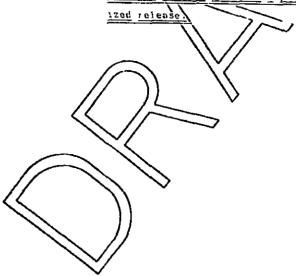
2). A program which relies on detecting the hazardous substance in the space between the primary and secondary convainer shall utilize one or more of the method's provided in Table 3.1. The following requirements shall apply when appropriate.

(A) Continuous monitoring devices shall be connected to an audiple/visual plans system.

(B) Manual monitoring shall be performed duily

except on meckends and recognized state and/or
federal holidays. Hanual monitoring may be
required on a more frequent pasts as specified
by the local agency

of the batarcous substance is not determined directly (i.e., liquid level measurements), the monitoring program shall specify the proposed method(s) for determining the proposed of the hazardous substance if the indirect methods indicate a possible unauthor-



<u>Methods of Monitoring for Hazardous Substances</u>
<u>in the Secondary Container</u>

Condition		Methods of Monitoring			
of the Secondary System	Type of Substance	Liquid Level	llazardous Substance	V apor	Vacuum Loss Detector
[1]	<u>_Stored</u>	Indicator [2]	Sensor [3]	Menztor	Decestor 1
Dry	Volatile	X	<u>x</u> /	> x	
Dry Dry Wet Wet	Nonvolatile Volatile Nonvolatile	X X	\ \\\\\\\\\	x	X
-wer	MOUADISCITE	^	1//	$\rightarrow$	

- [1] A "dry" system does not contain liquid within the secondary container during normal operating conditions while a "wet" system does.
- [2] Includes: continuously operated mechanical or electronic devices, manual determinations using mechanical relectronic or "stick" readings or visual determinations to detect the presence of any liquid ir "dry" systems or a change in liquid levels in "wet" systems.
- [3] Includes either qualitative or quantitative determinations of the presence of the hazardous substance.
- [4] Primarily used for double-wall underground storage tanks to detect changes in pressure or vacuum between primary and secondary container. The use of pressure or vacuum must be approved as part of the primary and secondary container approval by a nationally recognized, independent testing organization.

# (d) All monitoring programs shall include the following:

- (1) A written routine monitoring procedure which includes, when applicable: the frequency of performing the monitoring method, the methods and equipment to be used for performing the monitoring, the location(s) from which the monitoring will be performed, the name(s) or title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment, and the reporting format.
- which demonstrates, to the satisfaction of the local agency, that any unauthorized release will be removed from the secondary container within the shortest passible time and no longer than the time consistent with the ability of the secondary container to contain the hazardous substance. The response plan shall include, but is not limited to, the following:
  - A description of the proposed methods and equipment to be used for removing the hazardous substance, including the location and availability of the required equipment, if not permanently on-site, and an equipment

maintenance armedule for that the equipment located on-site.

responsible for authorizing the work to be performed.

- THE SECONDARY CONTAINERS SHALL BE EQUIPPED ALL A COLLECTION

  SYSTEM CAPABLE OF PERMANDS SUBSTANCE, AND LIGHTH LEAKAGE

  THEILTRACIONS CONTAINERS SHALL BE EQUIPPED ALL A COLLECTION

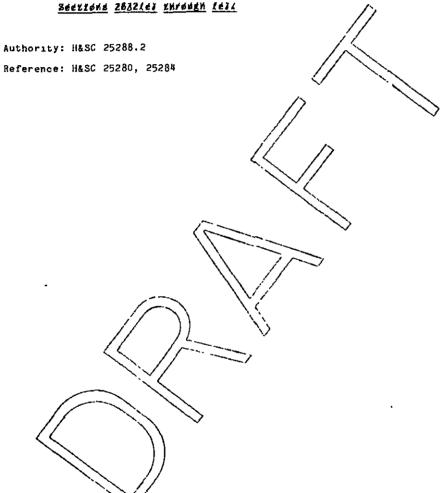
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  SENSOR SHALL BE CAPABLE OF SITUETS
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# detection system are exampt from the requirements of



# Adopt new section to read:

2633. Construction Standards for New Motor Vehrcle Fuel
Underground Storage Tanks

- (a) This section specifies alternate construction standards
  for new underground storage tanks which only contain
  motor vehicle fuels. This section may be utilized by
  permit applicants in lieu of Section 2631. If this
  section is used in lieu of Section 2631, then the
  monitoring standards specified in Section 2634 shall be
  used in lieu of those specified in Section 2632.
- (b) Primary containers used for the underground storage of motor vehicle fuel and constructed under this section shall somethy of product tight tanks be composed somethy by the state of fiberglass reinforced plastic, cathodically protected steel, or steel clad with glass fibre reinforced plastic and be installed in conjunction with the leak interception and detection secondary somethy system decribed in Subsection (d) through (f) of this section. 2833 and fell
- (c) Primary containers used for the underground storage of motor vehicle fuel and constructed of materials other

to the requirements of Sections 2011 and 2012 of this article.

demonstrate to the satisfaction of the local incredited the leak interseption and detection system nonleves the intersection and detection system nonleves the intersection and detection system nonleves the intersection and detection system.

(e) Method, of existructure for the lask interdeption and detection system for utilizing membrane linear shall be existed to now actorized the mensional of to lay if, and only if, the linear material meets the following standards:

permano. Pity for Ver specified in aubsection
263161)(1) as tester-against ASIM Reference Fuel 4.

contairment of the material shall be so sole for entering the material shall meet the criteria set forth in dubsections (a) '[1](2) A through (i) of this driftle as tested against '' motor vehicle fuel to be stored considering its variability or against

Will ofference us. 3. (3) The memorare liner shall meet the requirements set f the in Lunsaction 2031(j)(e) of this intiese.

3 13a

- (4) The liner has been installed under the supervision

  of a representative of the membrane liner

  fabricator or a contractor certified by such
  fabricator.
- (5) The excavation base and walls which will come into contact with the synthetic liner spall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects and protrusions.
- (f) (f) The leak interception and detection system (seedendary edentainer) and the response plan shall preclude the cortact of any leaked hazardous substance with ground water. At a minimum, the leak interception and detection system shall be above the highest anticipated ground water olderation. Proof that the leak interception and detection system seedendary destrainer and response plan will protect ground water must be demonstrated by the permit applicant to the satisfaction of the local agency. The requirement for this genonstration may be waived by the local agency for underground storage tanks that comply with the requirements of subsections (e), (f), and (g) of Section 2631 of this article. The demonstration shall, at a minimum, consider the following:

- (1) The containment volume of the leak interseption and detection system, seedingsty container
- (2) The maximum leak which could go undetected under the monitoring inventory reconciliation method required presented in Substational M. Section 2634 of this article and the maximum period during which the leak will occur;
- (3) The frequency and accuracy of the proposed method of monitoring the leak interception and detection system,
- (4) [2] The depth from the bottom of the leak

  interception, and detection system secondars

  contained to the highest anticipated level of

  ground water;
- (5) 133 The nature of the unsaturated soils under the leak interception and detection system secondary established and their ability to adsorb contaminants or allow vertical movement of contaminants;
- infiltration on the movement of any leak of

  hazardous substance and the available volume of

# tro leak interegotion and leteration system; and

(7) 183 The fature and timing of the response plan to cleanup the nazarda us substances which have been discharged from the primary certainer.

(g) (f) Pressurized piping systems that are connected to ivelude at automatici attline tentiaueurly sperative pressure loss derector and flow vestriftion device and sattler piping systems an underground storage tank that is constructed pursuant to the requirements of this section and monitored pursuant to the requirements of Section 2634 of this article are exempt from the leak interception and detection system secondary dankainer requirements of this section, provided that the pressurized plping system is monitored according to the appropriate section of Chapter 6 7 of Division 20 of the Health and Safety Code. the article This derector shall be converted to visual or sudible alarm system unless IL provides at least a BD percent reduction from normal ston lakery parking bibing stakeur anall be enginared Trask quee fren 445 qt oberaktou ko gekeek 11 4 Teak THE THE PIPING SYSTEM EXISTS.

Authority: H&SC 25288.27 Reference: H&SC 25280, 25284 licot rew section to real.

2634. Monitoring standards for New Motor Vinicle fuel Urderground Storage Tanks

(a) Manitaring of Underground storage tanks used for the storage of motor vehicle fuel and constructed pursuant to the standards of Section 2633 of this article shall darked at all of the following be monitored according to the requirements of the appropriate Sections of Chapter 6.7 of Division 20 of the Health and Safety Octe. In addition, 111 monitoring of the leak interseption and detection sections (b), (c), and (d) of this section.

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All pressurizes piping systems shall be monitored

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- (b) The floor of the leak interception and detection system

  shall be constructed on a firm base and sloped to a

  specific Idealism of collection sump.
- in the collection sump. or specific location at each menitering location. The access casing shall be:
  - (1) Capable of allowing any liquid that may be moving along the upper surface of the leak interception and detection system secondary dontainer to enter the casing;
  - (2) Sized to allow efficient removal of collected

    liquid and to withstand all anticipated applied

    stresses using appropriate engineering MIXN A

    safety factors; 6f 1/5
  - (3) Constructed of materials that will not be

- structurally weakened by the stored hazardous
  substancs product nor donate, capture, or mask
  product constituents for which analyses will be
  made;
- (4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection systems secondary container.
- (5) Capable of precluding leakage of any hazardous
  substance from the casing to areas outside of the
  leak interception and detection system; secondary
- 100 Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A secure facility will satisfy the requirements for protection against unauthorized access and vandalism.

Monitoring of the leak interception and detection system

# snall incorporate all of the following

(1) The use of a continuous monitoring device connected to an audible/visual alarm system or manual monitoring performed daily, except on weekends and recognized state and/or federal holidays. Monitoring may be required more frequently by the local agency based on an assessment of the available volume of the 'eak intercuption and detection system and the accuracy of the proposed monitoring method. and the national leak which could be undrieated under the insentary reconciliation merhad presented in Musettiar 1634 Approved methods of monitoring the leak interception and detection system include liquid lévél indicators hazardous substance sensors, and vapor monitors as specified for volatile hazardous substances in Table 3.4.

includes: the frequency of performing the monitoring method, the methods and equipment to be used for performing the monitoring, the location(s) from which the monitoring will be performed, the name(s) or title(s) of the person(s) responsible

for performing the monitoring and/or maintaining the equipment, and the reporting format.

(3) for methods of monitoring where the presence of the nazardous substance is not determined directly

(i.e., liquid level measurements), the monitoring program shall specify the proposed method(s) for determining the presence of the hazardous substance if the indirect method indicates the possible presence of the mater wehicle fuel.

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- developed prior to installation for any leak

  interception and detection system defitation which does

not meet the volumetric requirements of Sections

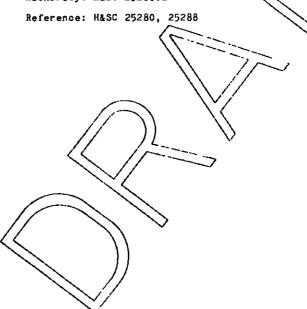
2631(e), (f), and (g) fdi and fel of this article. for
those underground storage tanks that meet the volumetric
requirement of Sections 2631(e), (f), and(g), the local
agency shall require the owner to develop a plan
pursuant to the regirements of Section 2632(d)(2) of
this article. The response plan shall consider the
following:

- (1) The volume of the leak interception and detection system sessionally south to the volume of the primary container;
- (2) The amount of time the leak interception and detection system servidesky containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked materials;
- and detection System seedendary container to the highest anticipated level of ground water;
- (4) The nature of the unsaturated soils under the leak interception and detection system secondary

or allow vertical movement of contaminants; and

(5) The methods and scheduling for removing all of the hazardous substances which have been discharged from the primary container and are located in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sessional for removing all of the hazardous substances which have been discharged in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sessional states.

Authority: H&SC 25288.2



Adopt new section to read.

2635. General Construction Standards

- (a) The following sections snall apply to all primary and secondary containers including leak interception and detection systems.
- (b) Primary containers and double-walled underground storage
  tanks shall be designed and constructed to comply with
  - clad with glass fibre-reinforced plastic, and glass
    fibre plastic tanks shall be fabricated and
    designed to standards developed by a nationally
    recognized independent testing organization or be
    listed by the testing organization. Applicable
    design standards shall include, but are not limited
    to, those provided in Appendix I.
  - manufacturer or an independent testing organization for durability and enemical compatibility with the mazardous substances to be stored using recognized

engineering practices for materials testing.

Acceptable methods for determining durability and chemical compatibility with the hazardous substances are provided in Appendix I.

(3) 114 Ercept for steel underground storage tanks a MARBAINAN ENISK SERAN mear plate (striker plate) shall be contered under all accessible openings of the underground stornge tank. The plate shall be constructed of steel or, if the steel is not compatible with the hazardous substance stored, a material cheststant to the storet harardous substance. The width of the plate shall be at least 9 inches wide and have an area of 1 square-foot or be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 0.053 inch (1.35 mm) and those constructed of other materials (as required) shall be of Sufficient thickness to provide equivalent protection. The place shall be rolled to the costours of the tank and bonded or seam welded in place. And have a miriana area equal to the openity <u>, ar a gaide Yubil whilhever is sublific</u>

(4) Single-wall primary containers of steel and the outer surface of double-walled underground storage tanks constructed of steel, with or without coatings, shall be protected by either a properly installed, maintained, and monitored cathodic protection system. With of Without eddlings of listed entrosion resistant materials, Adribetallie reinforces plantic coatings, composition, or Edatagreur sarrenzi muten nane Regu anerked berus #Identical Melidat Mesking Selection of the type of protection to be employed shall be based on a certification listing by a nationally recognized, independent testing organization or the judgment of a registered corrosion engineer or a Mational Association of Corrosion Engineers (NACE) accredited corrosion specialist taking into account the corrosion history of the area. underground storage tanks with Visted corresion resistant materials, non-metalic relaforeed plastic coatings, composites, or equivalent systems shall be holiday ested immediately prior to installation.

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Menitering of The cathodic protection system shall be demeinspected under the direction of a registered corrosion engineer or NACE corrosion specialist at the frequency specified in the certification or in accordance with the schedule prescribed by the system designer, but no less than semi-annually,

VANILEA Underground storage tanks in a vault and not backfilled are exempted from the requirements of this subsection.

(5) All primary containers and double-walled tanks
underground storage shall be installed according to
the manbfacturer's written recommendations or, if
no written recommendations exist, best engineering
practice.

(6) (2) All underground storage tanks shall be tested before being put into service in accordance with

the applicable sections of the Code under which
they were built. The ASME code stamp, API

\*\*MONOGRAM( or the Listing Mark of Underwriters
Laboratories, Incorporate), (dL) or any other

nationally recognized independent testing organization shall be evidence of compliance with this
requirement, guaranters by the manufacturer to be

product tight prior to leaving the identity.

(7) 133 Before being covered, erclosed, or placed in use, Prilowing installation all underground storage tanks and piping shall be tested for tightness either nydrostatically or with air pressure at not less than 3 pourds per square-inch (20.68 k/Pa) and not more than 5 pounds per square/inch (34.48 k Pa). Pressure pipies suall be restes secoraing to rne requirements specifies in Becrion 84111 of NPPA 304 PPIAMMENIE AND ROMBUSKIBLE KIGUIAS COGET Pressure piping shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system, or pneumatically tested to 110 percent of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch (34.48 kPa) gauge at the highest point of the system. This test shall be maintained for a sufficient time

(8) When required by the local agency, all underground storage tanks shall be equipped with an overflow protection system which includes the following elements:

A spill catchment busin which surrounds the

filk pipe and prevents the inflow of the

pazardous substance into the subsurface

environment. A level sensing device that

continuously monitors and indicates the liquid

level in the tank and either (B) or (C) 123 67

(B) An audible or visual alarm system triggered by

- a liquid level sensor to alert the operator of
  an impending overfill condition; or
- (C) An automatic shut-off device that stops the flow of product being delivered to the tank when the tank is full.
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- Subsection (b)(8) of this section shall be
  satisfied waived for underground storage tanks
  containing motor vehicle fuels in which a spill
  catchment basin surrounds the fill pipe and
  prevents the inflow of the motor vehicle fuel into
  the subsurface environment and:
  - (A) Both the fluid level is visually monitored and
    the filling operation is controlled by the
    facility/operator during filling of the
    boderground storage tank; or

- storage tank to be filled is determined

  immediately prior to filling to be at least

  103 percent of the volume of the entire tank
  compartment to be delivered or the volume of
  the entire tank compartment to be filled
  delivered plus 200 gallons, whichever is less,
  as determined by tank gurging; or
- metered into the underground storage tank and the available underground storage tank capacity is determined immediately prior to filling
- Steel nuterstand Isake tot bishurpie and nuteratively tot applicated and designed by the redpirements in find samplicated and tipe femily ferm with signs libre remotered bishric analy be the samplicatif professed steel ranks

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(c) Secondary containers including leak interseption and detection systems installed pursuant to Section 1635 of this inticle shall comply with all of the following:

- ercempand one area within the system of vertical planes surrounding the exterior of the primary containment unit. If backfill is placed between the primary ind secondary containment, then in evaluation shall be made of the maximum lateral spread of a point leak from the primary containment over the vertical distance between the primary and secondary containment. The secondary containment shall extend an additional distance beyond the vertical planes described above equal to the radius of lateral spread plus one foot. An additional distance foot
- precluding the inflow of the highest ground water articipated juring the life of the underground attrage tank into the space between the primary and secondary containers.

- (3) IBJ If the space between the primary and secondary containers is backfilled, the backfill material shall not preclude the vertical movement of leakage from any part of the primary container.
- the secondary container and any backfull material
  between the primary and secondry containers shall
  be designed and constructed to promote gravity
  drainage of a leak of hazardous substances from any
  part of the primary container to the monitoring
  locations(s).
- (5) Iwo or more primary containers shull not utilize

  the same secondary container if the primary

  containers store materials that in combination may

  cause a five or explosion, or the production of a

  flammable, toxic, ar poisonous gas, or the

  deterioration of a primary or secondary container.

  shall be separated in both the primary and

  secondary container.
- (6) Drainage of liquid from within a secondary container shall be controlled in a manner approved

materials from being discharged. The liquid shall by analyzed to determine the presence of any of the hazardous substance(s) stored in the primary container prior to initial removal and manthly thereafter for any continuous discharge (removal) to determine the approriate method for final disposal. The liquid shall be sampled and analyzed immediately upon an indication of an unauthorized release from the primary container.

the ground surface, the original excivation for the secondary container shall have a water-tight cover which extends at least 1 foot beyord each boundary of the original excivation. This cover shall be esphalt, reinforced concrete, or equivalent material which is sloped to drainways leading away from the excavation. Manuals Access openings shall be constructed as water-tight as practical.

Double-walled underground storage tanks and open vaults are exempt from the requirements of this subsection.

(8) The actual location and orientation of the

systems shall be indicated on as-built drawings of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local agency.

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Authority 866 25288.2 Reference: 84 July 25280, 79488 Article 4. Existing Underground Storage Tank Monitoring
Standards &filteria

Adopt new section to read:

### 2640. Applicability

(a) All owners of existing underground storage, tanks subject to this subchapter shall implement pursuant to the doublished date in Phabter 817 of Division 20 of the Health and Balety Edde a visual monitoring or alternative monitoring system that complies with this article and is approved by the local agency by the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code. A lecal agency shall not issue a permit II. ENG- WIREFEFORME BEGFASE KANK CANNOR BE adequately additioned. Id be adequate unless the monitoring system wast be is capable of: determining the containment ability of the underground storage tank and\_detecting attive and Nistoric unanthorized releases any active or future unauthorized releases. If the monitoring technique(s) selected is designed to directly deliter for detect the presence of the stored hazardous substance outside of the underground storage tank, then tests must be made to determine if the hazardous

Substance or any interfering constituents exist in the soil or backfill surrounding the underground storage tank. YMAY MAY GEENT IN THE SALENCE AND SECURITINESS WHEN MENICOPING SECURITY AND SECURITINESS WHEN MENICOPING SECURITY IN THE SPEECH OF IS NATIONAL SUBSTITUTES AND EXPENSES OF CONTROL OF MALE SECURITY WE CAPABLE OF MEASURING THE SECURITY SECURITY WE CAPABLE OF MEASURING THE SECURITY SECURITY THE SALENCY SECURITY SEC

The objectives of the monitoring program for existing underground storage tanks are to determine if whatehorized felesses are decenting of have decented in the past and to detect unauthorized releases that decent in the father before ground water is affected. Ground water monitoring may be utilized as a primary means of monitoring when the ground water does not have actual or potential beneficial uses. And to directly measure the describe in the free maining the the ground water systems, as described in Sections 26%, through 26%, shall be implemented where technically feasible to existing tanks that do not have

- Arricle 81
- subject to this Subchapter shall implement visual monitoring as described in Section 2642 2684 of this article for all visible portions of the underground storage tank, whenever feasible when if feasible. If the entire underground storage tank, is not susceptible to visual monitoring but a significant portion of the underground storage tank can be visually monitored. Enem that portion of the underground storage tank shall be monitored visually. Visual monitoring that can only be implemented during a portion of the year did to flooding those portions of the year. When feasible if Newsford wisual visual monitoring cannot be in white with the portion of the year.

- implemented for the entire underground storage tank
  throughout the entire year then one of the GENET forms
  of monitoring alternatives specified in Section 2641 of
  this article shall also be implemented. The monitoring
  alternative shall be operative during those times when
  visual monitoring is not feasible or for those portions
  of the underground storage tank which are not
  susceptible to visual monitoring.
- subject to this Subchapter who are not able to implement visual monitoring as specified in Section 2642 2888 of this article shall implement one of the monitoring alternative each alternate monitoring alternative each alternate monitoring alternative each alternate monitoring alternative each alternate monitoring affection 2641 2682 through 2686 of this article. Again monitoring appendice in Section 2641 2682 through 2686 of this article. Again monitoring appended thase on the ability to implement visual monitoring unless an alternative monitoring method is approved by the local agency which access the intent of subsection fel of this section. If an owner decomplication eviteria should apply the owner shall be relieved of the obligation to implement against the dentitoring.

- (e) The monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 of this article are minimums. Local agencies, as a condition of approval of a specific monitoring alternative, shall require additional or more frequent monitoring if necessary to comply with the objectives specified in Subsection (b) of this section and Subsection (d) of Section 2641 of this article.
- visual monitoring or a monitoring alternative listed in

  Section 2642 of this article in situations where
  environmental conditions make it impracticable,
  physically impossible, or life threatening to complete
  the required monitoring.
- THE ASSEMBLY NEW RESERVED IN SECTIONS 5885 KNAOREN 5888

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Authority: H&SC 25288.2

Beference: H&SC 25282, 25284, 25284.1

# 2541 Monitoring Alternatives

- to this subchapter who cannot implement visual

  monitoring for the ortice underground storage tank

  during all periods of the year shall implement, WIRMIN

  the time allewed; by the statutory deadline, one of the

  monitoring alternatives specified in Subsection (c) of

  this nection.
- monitoring alternative proposed Massed on the specification contained in Subsection (d) of this section and shall approve the monitoring alternative if it Massed finds that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in Subsection (b) of Section 2640 of this article. If the proposed monitoring alternative cannot be approved, then the local agency may request the submittal of another proposed monitoring alternative or may specify the implementation of a another monitoring alternative.

- (c) The optional monitoring alternatives are as follows:
  - monitoring alternative shall at a minimum utilize the procedures specified in Section 2643 of this article and shall be performed monthly at a minimum.
  - Water Monitoring with Soil Sampling.
    - (A) This monitoring alternative shall at a minimum include vadose zone monitoring, ground wate:

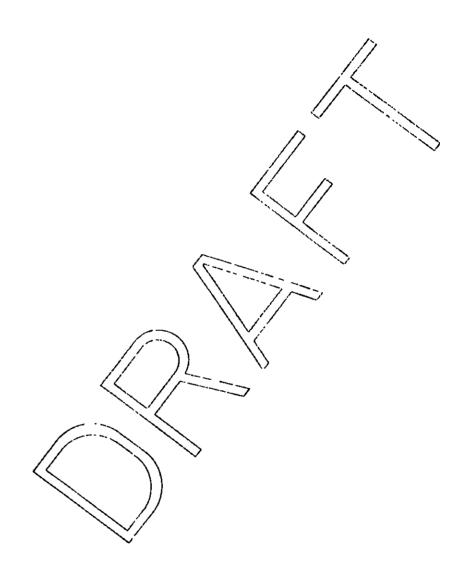
      monitoring, and soil sampling. Soil sampling is required only at the time the boring(s) and well(s) are installed.
    - (B) The vadore zone monitoring program shall be designed and installed pursuant to the procedures specified in Section 2646 and 2642 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. Other vadose zone monitoring shall be performed weekly, at a

# minimum.

designed and installed according to the procedures specified in Section 2647 and 2648 of this article and monitored semi-annually at a minimum. The minimum number of wells shall be as specified on Table 4.1 of this section for alternative no. 2. Analysis of samples collected dan shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being avaluated. The local agency shall require laboratory venification at periodic intervals it visual or field analysis cannot achieve levels of detection equivalent to laboratory analysis.

(D) The soll sampling and araiysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all buring(s) and well(s) installed.

(3) Various Zone Monitoring, Soil Sampling and Underground Storage Tank Testing:



#### TABLE 4.1 MONITORING ALLERNALIVES\*

MINIMUM REFERENCE MONITORING ALTERNATIVE METHOD. SECTION COMMENIS AND CONDITIONS PROBLETING USE OF ALTERNATIVES FREQUENCY ank Testing Section 2643 "iont hly Mone 2 Vapor I Must be able to do both vadose and ground water υı monitoring. Other Vadose T. Ground water should normally be loss than 100 fee Zong Monitoring deep to use this alternative. Daily/Continuous Section 2646 <sup>u</sup>eLhod 3. Minimum number of ground water monitoring wells and a. (round water equal to or less than 50 feet deep Ground Water Seri-annual Section 2647 o Single or multiple tanks (all <1,000 gal, same or closley spaced excavations) - one downgradient Section 2645 well per tank minimum up to thice wells. One-lime o Single tank (≥1,000 ga!) - two weils minimum one of which shall be downgradient. o two or three tanks (at least one \$1,000 gal, same or closely spaced excavations) - three wells, minimum at least one of which shall be downgradient. o lour or more tanks (at least one \$1,000 gal, same er closely-spaced excavations) - four wells innum, at least two of which shall be downgradient and the remainder equally spaced. Papelines - additional wells, it needed, as determined by the local agency. b. Ground water greater than 50 feet deep. o Single tank -one downgradient well. o Multiple tanks or closely spaced tank excavations - three wells uniformly spaced. unless the ground water gradient can be

accurately determined, in which case, one

downgradient well.

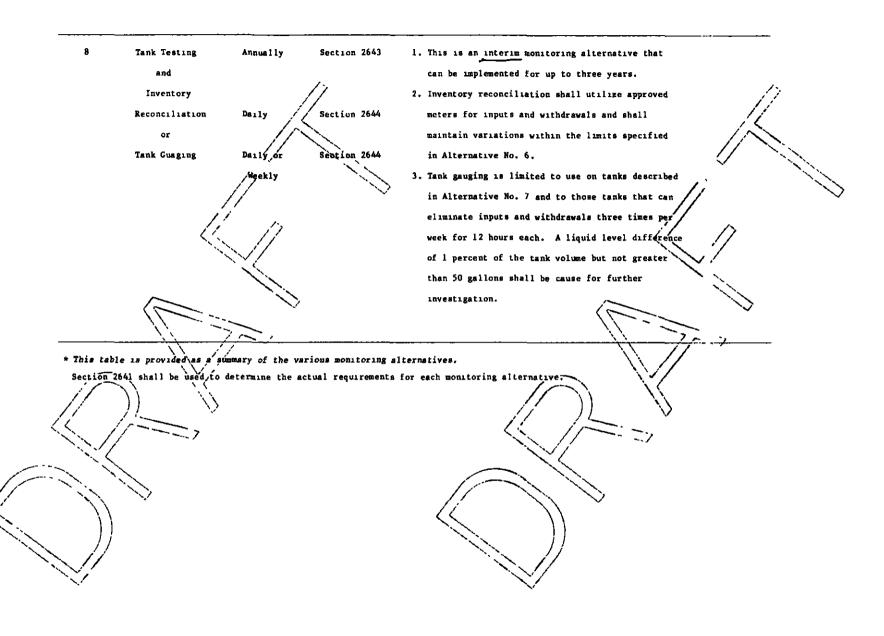
o Pipelines - additional wells, if needed. by the local agency.

3	Vadose	Daily/Weekly	Section 2646	This alternative shall not be used when first ground
	and Soils	07:	Section 2645	water is less than 100 feet deep and:
		One-Time	Section 2043	1. First ground water has actual or potential beneficial
	and	<i>\\</i>	200	uses (municipal, domestic, industrial, or agricultural
	Tank Testing	Annua 1	Section 2643	supply); or
	,	//	~	2. First ground water is hydraulically connected to
		/		ground water which had or potentially has beneficial
	<u> </u>			uses.
4	Ground Water	Weekly	Section 2647	1. Use of this alternative shall be limited to the
	and			following situations:
	Sofia	One-Time	Section 2645	a. Perennial ground water is normally less than
		7/		30 feet deep, and
				b. The ground water being monitored does not have
1				any actual or potential beneficial uses
/				(municipal, domestic, agricultural, or industrial
				supply), and
/</td <td></td> <td></td> <td></td> <td>c. The ground water being mositored is not hydraulically</td>				c. The ground water being mositored is not hydraulically
`~~(				connected to ground water which has any actual or
				potential beneficial uses (municipal, domestic,
<i>\\</i> '	$\searrow$			arricultural, industrial supply), and
11				d The monitoring well can be acreened in the
- ] ]				area 10 feet above the highest perennial ground
//				water level and 20 feet below the lowest ground
/				water level.
				2. Minimum number of ground water monitoring wells
				See Section 3a. of Alternative No. 2.
5	Inventory	Daily	Section 2644	1. Must use approved meters for tank inputs and

Reconciliation

and withdrawals.





- Minimum, include radose rane moritaring and arasysts of act, samples taken at the time from the boring(s) made for vadose zone monitoring, and tank testing, and installed.

  This alternative shall not be approved if first perental ground water, including intermittent, perened ground water, is less than 100 feet deep and this ground water has actual or potential beneficial uses (domestic, municipal, ignicultural, or industrial supply) or is sydraulically connected to ground and surface water which has actual or potential
- Section 2648 of this article or by evidence

  based on an evaluation pursuant to Subsection

  (p) of Section 2648 of this article or feederly

  character feedback wells or besings was first ground taxed according to the specifications in Subsection (p) [1] of Section 2648 of this article or by evidence based on an evaluation pursuant to Subsection (p) of Section 2648 of this article. Feederly

  character feedback wells or besings what first ground taxed its significantly deeper when 100

#### 1 tell

- instate of pursuant to the procedure, specified in Sections 2046 and 2043 of this article.

  Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. either tentimumumly be performed weekly, at a minimum.
- performed as specified in Section 2645 and 2648 of this article. Samples shall be taken from all borings installed.
  - performed yearly at a minimum according to the procedures specified in Section 2643 of this article.
- (4) Ground Water and Soil Testing:
  - (A) This monitoring alternative shall, at a mirimum, utilize ground water sampling and

beneficial uses.

taken at the time of well installation. This alternative shall not be approved if any of the following conditions exist:

(1) Pérénnial First ground water including intermittent, perched ground water is pormally greater than 30 feet deep;

(11) The ground water Being proposed for moritoring has actual or potential beneficial uses (domestic, municipal, industrial or agricultural supply) or is hydraulically connected to ground or surface water which has actual or potential beneficial uses; or

the local agency waives this requirement the well must still be capable of being perforated with the interval from 10 feet above the highest anticipated ground water level to 20 feet below the lowest performance ground water level. The 10-foot requirement max be waived by the local agency of ground water is less than 10 feet deep. If the local agency waives this requirement the

above the highest anticipated ground water level.

(B) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and shall be monitored monthly at a minimum. The minimum number of monitoring wells shall be as specified in Table 4.1 of this article for alternative no. 4. Analysis of samples collected can shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. If visual observation or field analysis is used the local agency shall require periodic aboratory apalysis if the visual observation or field analysis do not provide a degree of detection equal to that of laboratory analysis

(C) The sails sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all wells installed.

- (5) Inventory Reconciliation, Underground Storage Tanks

  Lesting, and Pipeline Leak Detectors
  - (A) This monitoring alternative shall, at a minimum, utilize inventory recordilation, underground storage tank testing, and pipeline leak det-ctors. The use of this alternative is limited to those underground storage tanks which cortain motor vehicle fuels.
  - (B) Inventory reconciliation shall be performed according to the procedures specified in Section 2544 of this Article. The owner or operator of an underground storage tank that experiences a variation in inventory reconciliation in excess of allowable variation(s) shall implement the evaluation procedures specified in Subsection (f) of section 2644 of this article 2 within the times specified.
    - recordination shall be the difference between the dalculated volume in storage and the actual volume in storage.

the previous day's physically measured
inventory, the sum of the daily variations
(considering positive and negative values)
shall not exceed the allowable variation
described in Subsection (v) of this
subsection.

the previous day's calculated inventory, ther
the daily variation shall not exceed the
allowable variation described in Subsection

(v) of this subsection. The calculated
inventory on any given day shall be based on
continuous calculations from the base day or
which the physical inventory was used.

stilled the physical intention to greater
than 30 days.

Ysum of the measurement error from Table 4.2 of

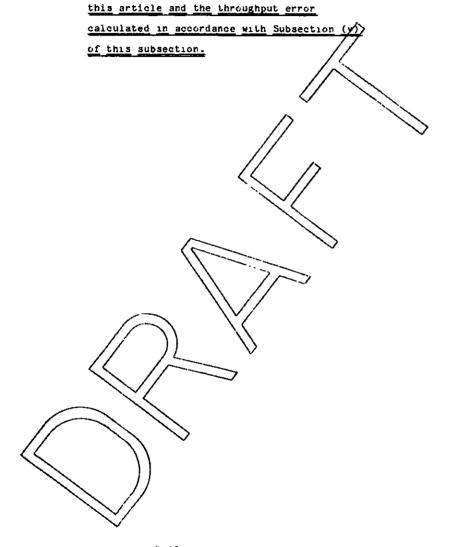


Table 4.2

Tark Size*	Mllowable
	Measurement
	Error*
less than 4000	25
4000 to less than 8000	<u>50</u>
8000 to less than 12000	<u>75</u>
12000 or greater	<u>100</u>
all values in gallons	>

v) The throughput error shall be 0.15

percent (0.0015) of the measured throughput

during the period under consideration as

described in either Subsection (11) or

Sabsection (111) of this subsection. Eines 115

Vertent (1804)

Daderground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article.

4.16

4.17

- using an automatic on-line pressure loss
  detector and flow restriction device. The
  detector shall be connected to a vusual gr
  audible alarm system unless it provides for at
  least a 50 percent reduction from the normal
  flow rates. Suction pipelines shall be
  monitored daily for indications of possible
  leaks.
- (6) Invertory Recordination, Juderground Storage Tank

  Testing, Pipeline Leak Petietors, Vadose Zore, or

  Ground Water Monitoring and Soil Testing:
  - (A) This moritoring alternative, shall, at a minimum, utilize invertory reconciliation, underground storage tank testing, and pipeline leak detectors. In addition, either vadose zone or ground water monitoring shall be included and analysis of soil samples taken at the time of boring or well installation.
  - (B) Irventory reconciliation shall be performed according to the procedures specified in Section, 2644 of this article. The owner or

experiences a variation in excess of any of the following shall implement the evaluation procedures specified in Subsection (f) of Section 2644 of this article & within the times specified.

- (1) daily variation: + 100 gallons
- (11) 7-day varration: + 5% of throughput or

  100 gallons which even is greater but, in no
  case, greater than 350 gallons
- (111) more greater than 30-day variation: +

  0.5% of throughput or 30-day variation 100

  gallons whichever is greater
- performed yearly at a miniumum according to the procedures specified in Section 2643 of this article.
- / pipelines shall be monitored as provided for in subsection (d) of Subsection (5) of this

#### subsection.

- designed and installed according to the procedures specified in Sections 2646 and 2648 of this article. The frequency of monitoring shall be based on the number and presiding of mentioning shall be based on the number and presiding of mentioning isolations to the distributed and storage tank and type of sampling and analysis; nowever; in no case shall mentioning be no less frequent than semi-annually.
- designed and installed according to the procedures specified in Sections 2647 and 2648 of this article. The minimum number of monitoring wells shall be as specified in alternative no. 6 on Table 4.1 of this article. Analysis of samples collected can be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. Ground water samples shall be collected and analyzed at least semi-annually. If samples are analyzed by visual observation or field

analysis the local agency shall require
laboratory analysis if the results of the
visual or field analysis are less accurate
than laboratory methods.

- the soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all borings and well's installed.
- (7) Underground Storage Tank Gauging and festing:
  - minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not normally have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of + 5 gallons or less when the liquid level is at the most sensitive measured to an accuracy of the underground storage tank is such that where a unit change in underground storage tank contents causes the smallest liquid level variation.

- (B) The underground storage tank gauging shall be performed according to the following specifications:
  - (1) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals;
  - taken at the beginning and end of consecutive periods, each lasting at least up to 5 days.

    No input or withdrawals shall occur-during these periods. The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person, and

(111) Underground storage tank testing shall be-penformed yearly at a minimum according to the procedures specified in Section 2643 of this article.

1 percent of the underground storage tark's

betweer measurements, an authorized release shall be assumed to have occurred. The reporting requirements of Anticle 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

- (8) Interim Alkernake Monitoring
  - (A) This alternative monitoring method shall, at a minimum, utilize underground storage tank testing and either inventory; recordilation or tank gauging. This alternative shall be available only to be used by any of the following datagories of owners for a period of up to 3 years after the effective date of these regulations.
    - Small businesses as defined in Subsection 11342(e) of the Government Code and non-profit organizations which would meet the criteria for a small business, provided the owner of the small business demonstrates to the local agercy that sufficient funds will be

available to properly close the underground storage tank pursuant to EMIS Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection within the 3-year period; or

ment to the local agency bhat the underground storage tank will be closed according to the procedures specified in Article Y of this subchapter within 3 years from the shatutory compliance date or fifthering elective with a new underground storage tank which complies with the provisions of Article 3 of this subchapter) The local agency shall not issue a permit pursuant to this subsection allewing the individual tank tank tank the individual to the subchapter). The local agency shall not issue a permit pursuant to this subsection allewing the individual tank the individual tank the individual tank in

(iii) Any governmental agency that demonstrates to the local agency that, due to budgetary constraints the governmental agency needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection. The local agency shall not issue a permit pursuant to this subsection alleging the implementative for longer than 3 years and shall not renew the permit.

(B) Underground storage tank testing shall be performed according to the procedures specified in Section 2643 of this article and shall be performed yearly at a minimum.

According to the procedures specified in

Section 2644 of this article. The owner or

operator of an underground storage tank that
experiences a variation in excess of the

levels specified in Subsection (c)(6)(B) of
this section shall implement the evaluation

procedures specified in Subsection (f) of
section 2634 of this article within the time
specified.

- performed according to the specifications of Subsection (c)(7)(B) of this section.

  Variations in excess of 1 percent of the underground storage tank volume or 50 gallons, whichever is less, shall be cause for further evaluation.
- (d) The rocal agencies shall evaluate each nonitoring alternative proposed to determine if it achieves the objectives specified in Subsection b of Section 2640 of this article according to the following:
  - (1) dnenever pressible, a primary method of monitoring other than ground water monitoring shall be performed monthly at a minimum.
  - an regular area where precipitation or surface

    runoff provides direct recharge of the ground water
    and the ground water being recharged has an actual
    or potential use (domestic, municipal, agricultural, or industrial supply), a monitoring method
    other than ground water monitoring shall be

utilized on a monthly or more frequent bis.s for leak detection non-toring.

may shall be required by the local agency in the areas described in Subsection (2) above.

implemented in these situations if ground water is less than in in fertial for the local agency shall review and approve the rumber and location of the more toring well(3). More than 1 underground storage tank or facility may be monitored using the same well provided the well is directly downgradient of all-underground storage tanks or facilities being monitored and is within 1,000 feet of all underground storage tanks being monitored.

Authority: H&SC 25288... Reference. H&SC 25284.1-

## 2642. 2641 Visual Monitoring

- (a) Visual monitoring shall be utilized as the principal leak detection monitoring method, where feasible, for all visible of a portion of the exterior surfaces of an underground storage tank AII dwhers of existing whiderground storage tank AII dwhers shall implement fissal monitoring for any exposed portion of an underground tank exposed portion of an underground tank unless the owner demonstrates to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable. If visual monitoring is required to be implemented then the provisions of Subsections (c) and (d) of this section shall be followed.
- (b) If say one of the following conditions are not the owner

  is exempt from implementing visual monitoring for that

  portion to the underground storage tark to which the

  following spriditions apply:
  - Any portion of an anderground storage tank that is

    in contact with the ground, surface a floor, or pad

    such that it cannot be seen. An underground

    storage tank in a saddle should not typically

### qualify for an exemption.

- (2) If the set of Visual inspection the exterior of the underground storage tank would put a person in a physically unsafe environment.
- inspection of the underground storage tank would require the use of extraordinary personal protection equipment tother than normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.). In order to visually inspect all of a pertion of the entire of the widerground storage tank
- (4) If The underground storage tank is located at a facility which is not staffed on a daily basis.
- c) A visual monitoring program shall incorporate all of the following:
  - Provisions for routine direct visual inspection of all accessible exterior surfaces of an underground storage tank and the horizontal surface of THE 11667 directly beneath the underground storage tank

snal, be monitored by direct viewing.

- prepared and be available at the facility which includes. the frequency of visual inspections, the location(s) from which observerations will be made, the name(s) or title(s) of the person(s) responsible for performing the observations, and the reporting format.
- minimum, and shall be more frequent if necessary.

  The irspection schedule shall be established such that some of the inspections occur in a realisted with the inquid-level in the underground storage tank is at its highest level. The inspection frequency shall be deleted determined such that any unauthorized release will remain observable on the exterior of or the horizontal surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface

immediately beneath the underground storage tank or portion thereof being visually monitored.

- (4) Recordation and reporting of the observations made and the liquid level in the underground storage tank at the time of the inspection.
- (d) The observation of any liquid on the exterior of or the horizontal surface immediately beneath the underground storage tank being visually monitored small cause the owner or operator to implement all or a portion of the following actions. The applicable actions and their timing shall be based on the site-specific situation, shall be intended to determine if the observed liquid constitutes an unauthorized release; and shall be included in the permit.

Laboratory or field inglysis of the observed liquid which shall include minimum levels of detection.

(2) Testing of the underground storage tark utilizing the procedures described in Section 2643 2842 of thus article.

3) Removing all hazardous substances from the

#### underground storage tank.

(e) Visual monitoring of the exposed portion of a partially concealed underground storage tank shall not reflexe an owner from implementing monitoring for the concealed portion of the tank using a rise driver monitoring alternative specified meritods described in Section 2641 this article.

Authority: H&SC 25288.2

Reference: H&SC 25284.1, 25284.2

#### Adopt new section to read

2643. 26#2 Underground Storage Tank Testing

- (a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies underground storage tank testing subject to this subsection full of this section implement a testing program pursuant to Subsections (b) (c) through (g) (g) of this section.
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- (b) felt mesting of underground stronge tanks shall utilize a metrica supable of detecting a release of a taxardous substance fess of at a rate of fession 0.05 gattons per hour or less, wese methods are limited to those tests that make adjustments for all of the following, if applicable:
  - (1) Ine presence of vapor pockets;
  - Thermal expansion or contraction of the hazardous aubstinue, which include any density considerations.
  - (j) Temperature stratification in the interground straige tink.
  - (4) Liaporation;
  - (2) Pressure variations in the underground storage
  - (b) Deflection of the underground storage tark erds.
- (c) Festing of pipelines which have been isolated may utilize a hydrostatic pressure test in lieu of the test

required in Subsection (b) of this section. This nydrostitic pressure test shall be conducted at a pressure of Betweer 88 And 50 ps; (2600 mm hg) or greater. The test shall be performed for at least 5 minutes. A pressure drop of more than 5 ps; (260 mm 43) per minute indicates the probability of a leaking pipeline. A pressure drop of less than 5 ps; (260 mm Hg) but greater than zero is inconclusive and a test pursuant to outsection (b) of this section shill be performed. The test shall be performed. The test shall be performed. The test shall be performed.

personnel who have received training in appropriate test procedures. The person performing the test described in Subsection (b) of this section shall certify that the test procedure utilized takes into account the variables specified/id Subsection (b) of this of this section and is capable of measuring leaks of 0.05 gallons per hour or less. Additionally, within 1 year after the development of a listing or certification procedure which evaluates the accuracy of the test for the type of test described in Subsection (b) of this section, only listed or certified tests shall be accepted.

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- (e) Within 30 days of completion of either of the leak

  detection test described in Subsections (b) or (c) of
  this section, the underground storage tank owner shall
  provide the local agency with a report presenting which
  includes the following information, if applicable:
  - (1) The procedures used (including any deviations from those recommended by the developer of the underground storage tank test procedure manufacturer) for the leak detection method;

- (2) The test results used in determining the volumetric rate of product loss;
- (3) The volumetric rate of product loss.
- The information shall be presented in written

  and/or tabular format as appropriate and shall be
  at a level of devail appropriate for the test

  procedure used.
- (f) Underground storage tanks which are found to lose

  product at a rate greater than or equal to 0/05 gpm

  shall be repaired or replaced as specified in Articles 6
  and 7 of this subshapter, respectively.
- The results of any tests, other than those required by this article, performed on the underground storage tank if any other interval to determine if the underground storage tank is leaking shall be reported by the underground storage tank owner to the local agency within 30 days of completion of the test. As specified in these states is a specified.

LAL proétetoura axotage kanks of pipelines containing

Flannable of combustible liquids shall not be pressure

Authority: H&SC 25288.2

Reference: H&SC 25284, 25284.1, 25284.2

Adopt new section to read:

2644. 26#2 Inventory Reconciliation Edgitedy

All owners of existing underground storage tanks

implementing a monitoring alternative in Section 2041 of

this article which specifies inventory reconciliation

subject to this subsubject shall except as provided for

in subject to this subsubject shall except as provided for

reconciliation specifies program as described in

Subsections (b) for through (f) of this section. This

requirement may be transferred to the operator pursuant

to the appropriate provisions of Chapter 6.7 of Division

20 Section 25284 2 of the Health and Safety Code.

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(b) fell winderground storage tanks shall be individually monitored utilizing a daily inventory reconciliation sources system that takes into account: separate daily biderground storage tank quantity measurements for both

the stored hazardous substance tank enntents and any water layer; and daily Fetail meter readings for underground storage tank input and withdrawals Underground storage tanks that are connected by a manifold Eggether may be monitored as a unit instead of individually. delivery records for ourgoing product; and daily wholesale mexer delivery records/for incoming product Underground storage tank input meters shall be calibrated within the accuracy required for meters used for wnolesale transactions in California Meters for underground storage tank withdrawals shall be calibrated within the accuracy required for meters used for retail sales transactions in Callfornia. Meters shall be approved for use by the County Department of Weights and Measures or by a person licensed by the County Department of Weights and Measure's.

(c) For the purpose of this section, "daily" shall be defined as at least 5 days per week. during which imputs of withdrawais are made to of from the inderground storage tank! This shall be a minimum of 5 days per week! This minimum may be reduced during weeks that a ref public holiday occurs that fall on Monday through friday, provides no imputs of withdrawais are made on the Moliday Local agencies may reduce the frequency of

monitoring to no less than once every three days at facilities that are not staffed on a regular basis provided that the monitoring is performed on every day the facility is staffed or that impulse or withdrawals are made from the underground storage tank.

(d) Underground storage tank quantity measurements shall be based on liquid elevation measurements which are:

119 Sabarie or wearating ro cheterenen or an inent

(1) 123 Performed during periods of no when no additions or withdrawals are being made to the underground storage tank. Additions of Withdrawals

owner, operator or other designated managerial personnel who have had appropriate training;

(3) (N) Based on the average of two readings if stick or tape gage measurements are used;

(4) (5) Capable of detecting a water layer at the sottom Iskést ésa of the underground storage tank, if possible. If the underground storage tank is

- not level, ther the measurement should occur at the lowest one of the orders, and storage tank,
- of the underground storage tark if access is

  available or measured it the lowest end of the
  underground storage tark with a calabration iditial
  measurement at both ends, if possible, to determine
  if any underground storage tark tilt exist; and, if
  so, its magnitude; and
- calibration chart provided by the underground storage tark manufacturer or supplier. This chart shall, if possible, take into account the actual tilt of the underground storage tank as determined initially as described in Subsection (5) above.
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(e) ffl The owner or operator shall, on a quarterly basis,
submit a statement to the local agency, under penalty of

perjury, KNAK KNA daka and that either: the data is within allowable variations; or a listing of the dates and variations that exceed the allowable.

hazardous substance greater than that specified, the operator or permittee shall implement the following. If inventory reconciliation indicates a gain of hazardous substances greater than that specified, the operator or permittee shall implement Subsections (1), (2), (3) and (5). The steps may be implemented sequentially or concurrently; nowever, they must be completed within the specified time periods. Reporting as required in Article 5 of this subchapter sharf be followed.

If completion of the steps described in Subsections (2),

(3) or (5) of this Subsection indicates inventory
reconciliation error that, when corrected cause the
levels specified not to be exceeded, then the remainder
of the steps need not be completed. If completion of
the steps described in Subsections (4) or (6) through

(8) of this subsection reveal the source of the loss or

said then the remainder of the steps need not be
completed.

Transfer of nazardous substances into and out of the underground storage tark may continue during implementation of the steps provided that the steps are completed within the specified periods and any loss or gain did not exceed two times the specified levels.

INVERTAGES desired and Daily recordination shall continue during implementation of the steps.

- (1) The operator shall notify the owner verbally or in writing of the fact that invertory recordilation indicates a loss of hazardous substances or gain of water within 24 hours of the completion of the daily reconciliation which, indicates the loss or gain.
- within 2 nours to determine if an error exists
  which would cause the guin or loss to be less than
  that specified.
- (3) The operator shall have performed, by a qualified person, a complete review of all inventory records

  from the last time a zero loss or gain condition existed. This shall include a new inventory reconciliation which was taken t least 8 hours

- this evaluation. This shall be completed within 24 hours of the conclusion of Subscition (f)(2).
- (4) The resulty scoresible physical facilities shall be carefully inspected for leakage. This shall be completed by trained personnel within 24 hours of completion of Subsection (f)(3).
- substance withdraws: shall be checked for clibration within 24 hours of completion of Subsection (f)(4).
- (6) All piping shall be tested within 24 hours of completion of Subsection (f)(5). The piping shall be isolated and hydrostatically pressure tested at 50 psi (2,600 mm Hg) or greater. If the pressure irops more than 5 psi (260 mm Hg) per minute, it indicates the probability of a leak in the line.

  Repeat the test at least once to ensure against compression of entrained air. Any pressure drop less than 5 psi (260 mm Hg) per minute is inconclusive as it may be caused by cooling. This step may be completed after the step described in

Subsection(f)(7) if excavation is necessary to perform the tests and if the step described in Subsection (f)(7) is completed within 48 hours of the completion of Subsection (f)(5). If this occurs, then this subsection shall be completed within 24 hours of the completion of Subsection (f)(7).

(7) The underground storage tank shall be tested using the tests described in Section 2643 of this article within 48 hours of completion of Subsection (f)(6).

(8) Additional tests or investigations as required by the local agency.

Authority: H&SC 25288,2 Reference: H&SC 25284, 25284.) Adopt new section to read:

2645. 2688 Soil Testing and Exploratory Borth

(a) Except for those tanks that have been granted an exemption where subsection (b) of this section All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2041 of this article which requires borings for vadose zone or ground water monitoring shall implement soil testing pursuant to subject to this subchapter shall implement an evaluation as described in Subsections (b) (c) through (n) (c) this section. You described if prior made of the anderground storage tank has resulted in an unapthorized release.

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- (b) Undisturbed (intact) soil samples shall be recovered

  from all borings used for the implementiation
  installation of vadose zone or ground water monitoring.

  This requirement may be waived by the local agency when
  borings cannot be drilled and sampled using accepted

- techniques that do not introduce liquids into the boring.
- (c) Soil samples shall be taken at intervals of 5 feet or

  less beginning at the ground surface, but sampling shall

  not be required below the water table nor in unweathered

  bedrock which has little or no primary permeability.
- (d) A soil sample shall also be obtained at the termination depth of a dry boring regardless of the spacing interval.
- do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using accepted techniques, the requirement for soil sampling may be waited by the local agency; however, the vadose zone or ground water monitoring system shall still be installed. Furthermore, once below the water table, it is not required that the wells be advanced using the same method that was used in the vadose zone.
- (f) Borlogs shall be/described in accordance with the provisions of Subsections (t) and (u) Sections 2648(p)

## and (q) of this article.

- (g) Soil samples shall be of sufficient volume to perform
  the designated analyses including soft vapor and soil
  extract analyses and to provide replicate analyses, if
  specified.
- (h) If more than one boring is utilized, composite samples

  consisting of material from the same depth from each

  boring may be used for laboratory analysis if such

  samples can be made without loss of constituents prior

  to analysis.
- (i) Samples shall be prepared stored, and transported by appropriate EPA mathods or other similar or superior methods approved by the local agency.
- that provide quantitative or qualitative results. If

  qualitative methods are used, then their lower detection

  lamits shall be verified by the test manufaturer or

  actual field tests for sensory-type tests. EPA-approved

  methods or other methods of similar or superior

  precysion and accuracy that are approved by the local

  agency shall be used. The local agency shall approve

the analysis method if it provides a lower level of detection that is below that which would Impact interfer with future monitoring methods.

persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank is torically changed, then analysis shall be for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents.

(1) (B) Samples may be analyzed in any order of depth. If

levels of hazardous substances known or suspected to

have been so contained in the underground storage tank

are detected at concentrations in excess of famore

background concentrations if the constituent occurs

naturally at the site Moderary the following additional

selfons will be remained fill further soils analysis is

not necessary pursuant to this subsection and the

hazardous substance(s) shall will be assumed to have

originated from the underground storage tank, and in

this situation, the remainder of the soil samples need

not be analyzed pursuant to these regulations. A permit shall not be granted unless A permit not be granted unless A permit not be granted if further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or that the underground storage tank is not the source of the hazardous substance or that the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite identities and the presence of the hazardous substance already in the environment.

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release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair on absolute close the underground storage tank pursuant to Article 6 or 7 of this subchapter.

(n) 163 If evidence of an unauthorized release is not detected, an alternative leak detection monitoring system shall be installed pursuant to Section 2641 of this article. 2685 67 2685 and an assurance monitoring

system anall be installed according to Bection 28474 Authority: H&SC 25288.2 Reference: H&SC 25284.1

Adopt new section to read:

## 2646. 2648/ Vadose Zone Bereetien Monitoring

- (a) All owners of existing underground storage tanks

  implementing one of the monitoring alternatives

  described in Section 2641 of this Erticle which requires

  vapor or another form of vadose zone monitoring shall

  subject to this subchapter shall except as provided in

  subjection for of this section implement the a vadose

  zone detection monitoring system pursuant to Subsections

  (b) fell through (h) of this Section.
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- Section 500% of this article was neen implemented:
- (b) Let Vadese zone monatoring shall may consist of vapor monitoring, as soil-pore liquid monitoring, or other forms of vadose zone monitoring. Sr a Combinations of these MSKN methods may be used.
- (c) Wells for vapor monitoring shall be fully perforated

  except for that portion of pressive adjacent to a surface
  seal and that portion of the bottom of a well where a
  plogged, blank segment seetless of casing is used as a

free liquid trap.

- (d) The number, location, and depths of vadose zone
  monitoring points shall be selected so as to give the
  earliest possible warning of any unauthorized release
  from the underground storage tank.
- (e) Subsurface vadose zone monitoring systems shall, if

  possible, be located within the backfull surrounding the

  underground storage tank. if possible
- (f) Vapor monitoring for underground storage tarks may shall
  be used in accordance with the following criteria if the
  vapor characteristics of the stored product are
  susceptible to detection:
  - (1) Before any method of vapor menitoring is approved for a specific site, it shall be demonstrated by an actual on site demonstration, using an appropriate tracer substance, that vapor would actually be detected by the installed system. This requirement may be walved by the local agency based on a demonstration by the applicant that the proposed monitoring system has been proven to be effective in detecting unauthorized releases from underground

storage tanks in equal or less ideal favorable
situations. The following factors shall be
considered in comparing the demorstration to the
actual on-site conditions:

- (A) Backfill material's and grain size distribution.
- (B) Type and homogenity of native soils.
- (C) Range of moisture contents of the backfill and
  native soils that will be encountered and
  their effect on vapor migration and detection.
- (2) The location and depth at which each sensor is

  -placed relative to the underground storage tank
  shall be determined according to the most probable
  movement of vapor through the backfull or
  surrounding soil.
  - Vapor Vapor ing monitoring wells placed in the backfill shall be constructed so that any Yéakágé unauthorized release that may pond at the horizontal interface between the backfill and natural soils seils can be detected in the vapor

- (g) Soil-pore liquid monitoring and other forms of the vadose zone monitoring may be approved if the discharge can clearly show that:
  - (1) The stored substance is susceptible to detection by the proposed technique.
  - (2) The stored substance will not attack the materials

    from which the detector system is constituted or
    otherwise render the detector system inoperable.
  - (3) The site and soil characteristics will not prevent detection of an unauthorized release by the monitoring system. wairs a sail-park liquid device in a sail-park liquid
  - (4) The proposed technique will be effective in providing early detection of underground storage tank leakage.
- (h) Borings shall be described in accordance with the provinces of the Subsections 2648(t) and (u) of this article.

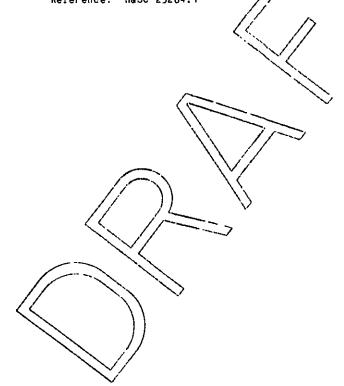
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Authority: H&SC 25288.2 Reference: H&SC 25284.1



4.62

Adopt new Section to read:

2647. 2686/ Ground Water Keak Bereerich Monitoring

- (a) All owners of existing underground storage tanks

  implementing one of the monitoring alternatives in

  Section 2641 of this article which requires ground water

  monitoring sabbject to this Subsection full of this section implement

  a ground water leak setteetion monitoring system pursuant
  to Subsections (b) fell through (j) ffl of this section.
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  - Secribe 2841 of this article have been implemented
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- (b) All ground water monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster.
- feet below the lowest anticipated ground water level and at least 15 feet below the underground storage tank bottom. However, wells shall not extend through laterally extensive clay layers that are below the water table and are at least 5 feet thick. In these situations, the well shall be terminated 1 to feet into this clay layer.
- bottom of the boring and be factory perforated from a point 1 foot above the bottom of the casing to an elevation bottom the bottom of the casing to an elevation bottom the bottom of the casing to an elevation bottom the bottom of the surface seal or to the ground surface, whichever is the lowest point above the highest anticipated ground water level. The indicate highest anticipated ground water level. The indicate highest satisfaces ground water level water level is the highest anticipated ground water level or to the bottom of the surface water level or to the bottom water level or to the bottom water level or to the bottom of the level or to the bottom of the level or to the bottom water level or to the bottom of the level or to the level or

- (e) Ground water monitoring wells shall be constructed as

  filter-packed wells that will prevent the migration of
  the natural Soil into the well and with factory
  perforated casing sereens that is sized to prevent
  migration of filter material into the well.
- (f) All well casings shall have a bottom cap or plug.
- (g) Filter packs shall extend at least 2 feet above the top

  of the perforated zone except where the ground surface

  is less than 10 feet above the highest ground water

  level in which case this requirement may be waived by

  the local agency provided the filter pack extends to the
  top of the perforated zone.
- (h) Ground water monitoling wells shall be constructed with easings having a minimum inside diameter of 2 inches which is installed in a boring whose diameter is at least 4 inches greater than the sattate inside diameter of the casing.
- (i) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack.
- (N Borings shall be described in accordance with the

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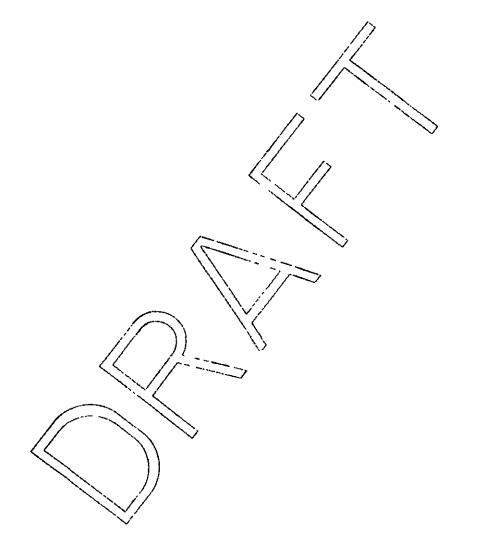
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Authority: H&SC 25288.2 Reference: H&SC 25284.1



Adopt new Section to read:

2648. General Mell Construction and Sampling Methods

- (a) Soil and water TWE sampling equipment and materials used to construct a well shall be compatible with the stored hazardous substance preduct and shall not donate, capture, mask, or alter the preduct constituents for which analyses will be made.
- (b) Representative samples of all imported materials used for filter 16 fravel packs of Backfill wells and to construct form seals shall be evaluated tested to determine their acceptability with regard to Subsection (a) of this section.
- (c) All drilling tools shall be thoroughly cleaned

  immediately before a boring is started and idmediately

  after a period is completed.
- (d) All well casings, casing fittings, screens grayer packs
  and all other components that are installed in the well
  shall to be thoroughly cleaned before installation in
  the boryng.

- Sample is taken.
- f: Uniting that continue there we implied in inorganity of Subsection (a) of this section. All additives used and the depth in which they were used shall are to be precisely accorded, recorded precisely in the ocranging.
- (g) Representative simples of additives, sement, Sentomite, and fitter media greats (shall be retained for 9) 18/3 for possible analysis analysis for contimurating or interfering constituents.
- INS ALL SELL SERLES SHELL MAVE & BORREN CED OF PLUS!
- Teas than B teek deem and the reason from the ground surface seals for the respect to the perior subject the perior the time perior of surface seals from the ground surface seals for the respect to the seals for the subject to the subject the subject to the sub
- (n) 141 411 ground water moritoring wells shall be properly

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- (1) The Ages (2007 Lines by Mondres with Carrier arter-
- (1) Well hears that we enclosed in a functive security structure in a will protect, the west from its artry of surface water, ancidental brance, arabbanized access, and vandalism this may be accomplished by providing a looked well cap on by securing the facility within which a well is looked. Wells within a secure facility
- ik! [MI Pertinent well information including well

  identification, well type, we' depth, zering and well

  casing flameters if more than one size is used, and

  perforated intervals depths sivil be dermarently affixed

  to the interior of the surface security structure and

  the well identification number and well type shall be

  affixed on the exterior of the surface security

  structure.
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- (1) Surface seals for vapor wells that are completed no more than 5 feet below the bottom of the underground storage tank and which are above any free water zores shall be required at the descretion of the local agency on a site-specific basis.
- (m) If surface seals for vapor wells that are completed in or below a free water zone are sMail be required the seal shall not extend below the top of the underground storage tank.
- (n) Vapor wells constructed wholly within backfill that
  surrounds the underground storage tank and which extends
  to the ground surface need not be sealed against
  infiltration of surface water.
- (c) The need for surface seals for other types of vadose zone installations shall be determined fedulfed on a case by-case basis.
- (p) In order to implement monitoring Alternatives 2, 3, 4,
  and the ground water monitoring portion of 6, the

highest anticipated ground water level and existing ground water level shall be determined. Wisterie Highest anticipated ground water levels shall be determined by a review of six water level measurements on record for wells within \$ 1 mile of the site.

Existing site ground water levels shall be established by either water level measurements taken within the last 2 years in all, but not less than 34 existing well(s) including at least 1 downgradient wells within 500 feet of the facility which are perforated in the zone of interest or by drilling at least one exporatory boring constructed as/follows:

- downgradient if possible and as near as possible to the underground storage tank within the boundaries of the property eroompassing the facility, but no further than 500 feet from the underground storage tank.
- (2) The exploratory boring may be of any diameter capable of allowing the detection of first water.
- (3) The exploratory boring shall be drilled to first

  perennial ground water or to a minimum depth of 100

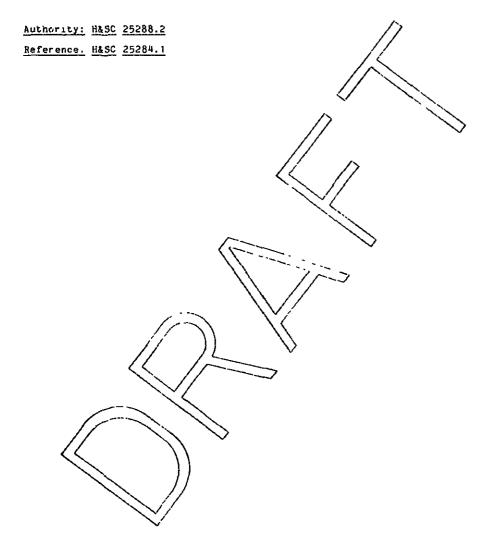
- feet for Alternatives 2, 3, 5, and 6 or to a minimum depth of 30 feet for Alternative 4.
- monitoring is part of the monitoring alternative,
  the boring shall be converted to a ground water
  monitoring well consistent with the provisions of
  this Section and Section 2647 And 2648 of this
  article.
- not required or if the exploratory boring does not encounter ground water, it shall be sealed in accordance with the provisions of Sections 2648(q) and (s) of this article.
- (q) All borings that are not used for ground water or vadose

  zone monitoirs shall be sealed from the ground surface
  to the bottom of the boring with bentonite grout.
- (r) All borings that are converted to vadose zone monitoring
  wells in which the monitored interval is shallower than
  the total depth of the boring, shall have the portion of
  the boring which is below the monitored interval sealed
  with bentonite grout.

- (s) All slurry-type grouts used to abandon boring or for well seals shall be emplaced by the tremie method.
- Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System. A technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be deemed qualified to log borings, provided the aforementioned professional reviews the logs and assumes responsibility for the accuracy and completeress of the logs.
- (u) All wel zones above the free water zone shall be noted and accurately logged.
- (v) If evidence of contamination is detected by sight,

  smell, or other field analytical method, drilling shall
  be halted until the responsible professional determines

  if drilling deeper is advisable.



Article 5. Release Reporting Requirements

Adopt new section to read:

# 2650 Applicability

- (a) All unauthorized releases from the primary or secondary container Must midt the shall be reported reporting according to the didning and dispeddi requirements of the appropriate sections of Chapter 6.7 of Division 20 23288/3 and 25283/A of the Health and Safety Code and this article. Medition
- (b) Certain unauthorized releases to secondary containers, as described in Section 25284.3 of the Health and Safety Code, shall be recorded on the operator's monitoring reports according to Section 2651 of this article. No other report shall be required if the leak detection menitoring system in the space between the primary and secondary containers can be reactivated within 8 hours.

  This provision shall be applicable only to new underground storage tanks as defined in Article 2 of this subchapter.

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- Lebility the felicity in gention 5831 of this wastister for Attitude the second the seco
- repetring sim. he reported wrent 24 hour, after the release has been, or should have been, detected according to att defined in Section 2652 of this article.

Noterinal 9800 20234.31,26734.4

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Adopt sew seution to read

2551. Unauthorized - detail Requiring fecored

- this article shall include:/
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  - (1) List of type, quantities, and concentration of hazardous substances released.
  - (2) Method of cleanup. and deak
  - (3) Method and location of disposal of the released

    hazardous substances (Indicate whether a indicate whether a indicate whether a indicate white a indicate white white indicate white indicate white w
  - (4) Method of future leak prevention or repair. If
    this involves a change as defined in Article 10,
    Section 2712, 2782 Subsection (a) of this
    subchapter, then appropriate reports pursuant to
    that Article shall also be filed.
  - then a description of how the monitoring system

    between the primary and secondary container has

### been re-activated.

- (6) Facility operator's name and telephone number.
- (7) The appropriate estimated approximate costs for cleanup to be submitted valuntarily.
- submitted pursuant to Subsection (a) (b) of this section and shall review the permit and may inspect the underground storage tank pursuant to the provisions of Article 10, Section 2712, 2702 Subsections (g) and (h) of this subchapter. The local agency shall find that the containment and monitoring standards of Article 3 of this Subchapter can contained to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow compliance with the spandards,
- (c) (d) Datectoration of the secondary container is likely when any of the following conditions exist:
  - (1) The secondary container will have some loss of integrity due to contact with the stored hazardous substances;

- (2) The moderated means used to signoup the released nazardea, substance sculi damage the secondary content at a pr
- the primary container, in added to the secondary container for treatment or noutvillation of the released his indicas substance appart of the property.
- reportable unauthorized release Yeak-due to initially unarticipated facts, the release shall immediately be treated as a reportable release pursuant to Section 2552 of this Article.

Authority: 4%30 .529d.0 Reference: d&SC 25284.3 Adopt new sestion had illows:

2672. Unsuther red Rolesses Requiring Immediate Reporting

- (3) 11 Strong magnetics and releases Anton are described by
  eigner Ambergier (13) or (23) district subsective small of
  reported to specified in Subsection (13) of this faction.

  IN Addition the requirements of Subsections (63) (63)

  And (6) of this Section shall be interest.
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- (b) AII MMANUMOVIZED VEZESSES MEETING THE CYTECHTS OF

  SUBSCENTION (A) OF THIS SECTION SMAIL WE VEROVED WITHIN

  24 hours after the release has been detected, or should

  have been detected, using required monitoring, the

  operator of permittee shall notify the local agency and

  the State Office of Emergandy Services on the and

  regional board Regional Mater Avality Eduted Beards
- (c) Within 5 working days of detecting the release,

  securrence the operator or permittee shall submit to the

  local agency a full written report to include all of the

  following information which is known at the time of

  filing the report:
  - 1) List of type, quantity, and concentration of hazardous substances released.
  - (2) The results of all investigations completed at that

- time to determine the extent of soil or ground water or surface water contamination due to the release.
- (3) Method of cleanup implemented to date, proposed

  cleanup actions, and approximate cost of actions
  taken to date, and proposed elemented
- (4) Method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water (INCIDE indicate whether a dopt of hazardous waste manifest[s] is if utilized):
- primary and secondary containers. If this involves
  a change as defined in Subsection 2712(a) 2702(a)
  of Article-10 of this subchapter, then appropriate
  reports pursuant to that article shall also be
  filed.
- (6) Facility operator's name and telephone number.
- (d) Until cleanup is complete, the operator or permittee

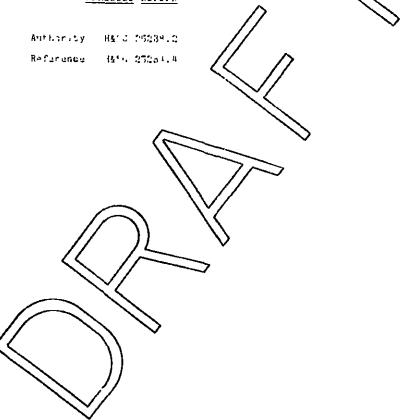
regional board every 3 months on at 4 more frequents
interval appointed by 3 responsible agency. End Ideal
agency of Regional Beard to the Ideal agency and the
regional beard ine reports small include the
information requested in subsections (c)(2), (1)(3), and
(c)(4) of this Section.

(e) (f) Ine reporting requirements of this section are in addition to any reporting requirements specified by Section 132% of Division " of the dater lode and other laws and regulations.

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### Article 6. Allowable Repairs

Adopt new section to read:

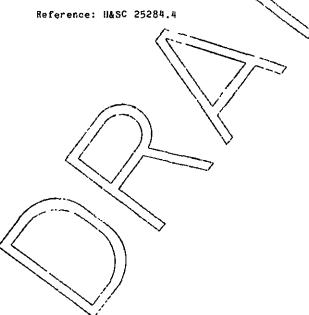
## 2660. Applicability

- (a) This article describes the conditions which must be met to allow primary container repairs of underground storage tanks containing motor vehicle five not under pressure utilizing the Ké allow Kine was all interior coating process of Mazardous substance underground storage tank testing following repair.
- (b) Section 2661 of this article lists the required

  evaluations which must be completed in order to allow
  the repair of a primary container. A satisfactory
  demonstration of each part of Section 2661 of this
  article shall be made prior to approval by the local
  agency of the sepair process.
- (c) Section 2662 of this article describes the required methodology which must be utilized in the interior coating regair process.

(d) Section 2663 of this article lists the required primary container monitoring which shall be implemented by amendment of the permit by the logal agency following primary container repair. Subsections (a) and (b) of Section 2663 of this article describe the monitoring which shall be performed prior to placing the underground storage tank back in service.

Authority: HASC 25288.2



Adopt new section to read:

## 2661. Repair Evaluation

- (b) It shall be determined if the failure mechanism is

  isolated to the actual failure or is affecting other

  areas of the underground storage tank, or if any other
  failure mechanism is affecting the primary container.
- (c) If interior living is the proposed repair method One of the following tests shall be conducted to determine the thickness of the underground storage tank:

1) An ultrasonic test.

(2) Certaffcation by a special inspector that the shell

will provide structural support for the interior

lining. The special inspector shall make this

certification by entering and inspecting the entire

interior surface of the underground storage tank
and shall base this certification upon the

following procedures and criteria:

(A) If the underground storage tank is made of fiberglass, the underground storage tank shall be cleaned so that no residue remains on the underground storage tank wall surface. The special inspector shall take interior diameter measurements and, if the cross-section has compressed more than 1 percent of the original diameter, the underground storage tank shall not be certified and shall also not be returned to service. The special inspector shall-also conduct an interior inspection to identify any area where compression or tension cracking is occurring and shall determine whether additional glass fiber reinforcing is required for certification before the underground storage tank may be lined.

(B) If the underground storage tank is made of

steel, the underground storage tank interior surface shall be abrasive blasted completely free of scale, rust, and foreign matter.

Acceptable procedures for metal blasting are provided in Appendix I. The special inspection shall sound any perforations or areas showing corrosion pitting with a brass ballpeen hammer to enlarge the perforation or break through a potentially thin skeel area.

Undergrund storage tanks that have any of the following defects shall not be certified or returned to service.

an open seam or a solit longer than 3 inches.

perforation larger than 1-1/2 inches in than 2-1/2 inches in than 2-1/2 inches in diameter.

(11) An underground storage tank with 5 or more perforations in any 1 square-foot area and any 1 perforation is wore larger than 1/2 inch in diameter. In any 1 square-foot area

more perforations in a 500 square-foot area and any 1 perforation is some larger than 1/2 inch in diameter. In a 500 square-foot area

(v) Any failure or opening within 6 inches
of any seam or weld.

(3) A test approved by the board as comparable to the tests specified in subparagraph (A) or (B).

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of steel afderground storage tank is the proposed repair methods they it could be demonstrated to the satisfaction of the local agency based or at altrasonia of tone contains and exist. If a serious correspon problem exists, at interior limits repair may be allowed by the initial agency of the demonstrated that new or additional correspon protection will significantly minimize the correspon and that the existing correspon problem does not threater the structural integrity or containment ability of the underground storage tank.

(e) If interior lining is the proposed repair method, then
it shall be demonstrated that the primary container has
never been repaired using an interior lining.

Authority H&SC 25284.2 Reference: H&SC 25284.5 Adopt new section to read:

#### 2662. Repair Methodology

- (a) If an interior living of an underground storage tank

  \*\*epair\* is approved by the local agency pased or

  \*\*satisfactory demonstration of the issues raised in

  Section 2661 of this article, then the repair must be

  accomplished according to the applicable subsections of
  this postion.
- (b) If interior coating to the method of repair, the

  material used in the cepair shall be applied in

  accordance with nationally recognized engineering

  proctices Ar example of such a practice is the

  American Perroleum Institute's recommended practice No.

  1831
- (c) The repair material and any adhesives used shall be compatible with the existing tank materials and small not be subject to deterioration due to contact with the hazardous substance being stored.
- (d) The repair material and living process shill be listed or certified by a nationally recognized independent

effective 1 year after the effective date of these regulations or 1 year after a listing or certification procedure is available, whichever is later.

Authority: H&SC 25288.2 Reference: H&SC 25284.5 Adopt new section to read:

2663. Primary Container Monitoring

(a) After any repair, the primary container shall be

demonstrated to be capable of containing the stored

hazardous substance by satisfactorily passing the

underground storage tank test as described in Section

2643 of Article 4 of this subchapter. The underground

storage tank shall also be vacuum tested at a vacuum of

5.3 inches (135 mm) Hg for 1 minute. The vacuum test

shall not be required if technology is not available for

testing the underground storage tank on-site using

accepted engineering practices. Standard Installation

tests specified in Section 247/3 of the Plandable and

Combastible Lights East adopted by the Mational Fire

Protection Association on November 204 1984 (NVPA 304

1984)

(b) All pipelines shall be pressure tested following repair to assure the adequacy of the repair. The testing shall be accomplished using accepted procedures. Acceptable procedures for pressure testing are provided in Appendix I. Meseriked in the applicable sections of ANSI BZI(
American Mational Standard Code of Pressure Piping or

National Fire Protection Association Flammable and COMBUSTIBLE KIGHLES CODE (NPPA 80)/ Authority. H&SC 25288.2 Reference: H&SC 25284.5

Adopt new Section to read:

#### 2670. Applicability

- (a) This article defines temporary and permanent closure, and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.
- this article shall apply to those underground storage tanks in which the storage of hazardous Mazarda substances maxerials has deseed but where the underground storage tank owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances.

  \*\*Assertials\*\* Section-2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances maxerial consistent with permit conditions.
- (c) The permanent closure requirements of Section 2672 of
  this article shall apply to those underground storage

maxeriais has ceased and where the owner or operator has no intent within the next 2 years to use the underground storage tank for storage of hazardous substances.

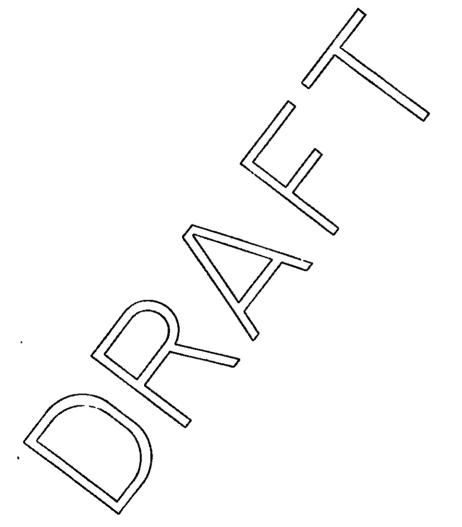
- (d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances datefield are continued to be stored even though there is no use being made of the stored substance, talefield In these cases, the applicable containment and monitoring requirements of Article 3 or 4 of this subchapter shall continue to apply.
- (e) During the period of time between cessation of hazardous substance waske storage and actual completion of underground storage tank closuse pursuant to Sections 2671 or 2672 of this article, the applicable containment and monitoring requirements of Article 3 or 4 of this subchapter shall contained to apply.
- (f) AN LESSY AS days Prior to closure, dessauled of subvage
  of Mazardous manerialsy saless such dessauled desure as
  result of an unauthorized release or in order to
  prevant an unauthorized release or minimize its effect;
  the underground subrage tank owner shall submit to the
  local agency a proposal describing how the owner intends

appropriate. The requirement for prior submittal is waived if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release. In this situation, the underground storage tank owner shall submit the required proposal widgin 14 days of either the discovery of an unauthorized release or the implementation of actions taken to prevent or minimize the effects of the unauthorized release.

- unauthorized release do not qualify for temporary closure pursuant to Section 2671 of this article until the underground storage tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been tade which that would allow the underground storage tank to be capable of storing hazardous substances attarials pursuant to the permit issued by the local agency.
- (h) Underground storage tanks that have experienced an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 of this article Sauthorized

Authority: HASC 25288-2

Reference, HASC 25286



Adopt new Section to read:

#### 2671. Temporary Closure

- (a) This section applies to those underground storage tanks
  in which storage has ceased but where the owner or
  operator proposes to retain the ability to use the
  underground storage tank within 2 years for the storage
  of hazardous substances.
- (b) The owner or operator shall comply with all of the following:
  - (1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code. 46 16116661
    - PARAJOR + LEGALIS SERVED FOR THEORY WER OF
    - OF AR A NATATIONS ASSET!
    - his the underground storage task contained a nizardous substance that could produce ilammable vapore at standard temperature and pressure, then

the underground storage tank, either in part or us a whole, shall be dempletely purged of the flammable vapors to levels that would preclude an explosion or such lower levels as may be required by the local agency.

- (3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.
- (4) Except for required venting, all fill and access
  locations and piping sould be sealed utilizing
  locked caps or correcte plugs.
- (5) Power service shall be inscompacted from all pumps
  associated with the use of the underground storage
  tank except if the jump services some other
  equipment which is not being closed.
- (c) The monitoring required pursuant to the permit may be modified or eliminated during the temporary closure period by the local agency. The local agency shall consider, in making the above decision, the need to maintain moditoring in order to detect unauthorized

releases that may have occurred during the time the underground storage tank was used but that have not yet reached the monitoring locations and been detected.

- THIS WOULTGAINS WAS RE LEGACES!

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- (d) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to assure that the temporary closure actions are still in place.

  This shall include.
  - (1) Visual inspection of all locked caps and concrete plugs.
  - (2) If locked caps are stillized, then at least one
    shall be removed to determine if any liquids or
    other substances nave been added to the underground
    storage\_tank-or if there has been a change in the
    quantity or type of liquid added pursuant to
    Subsection (b)(3) of this section.

Authority: H&SC 25288.2 Reference: H&SC 25286

#### 2672. Permanent Closure Requirements

- (a) Owners of underground storage tarks subject to permanent closure shall comply with either Subsection (b) of this section for underground storage tank system removal or Subsection (c) of this section for closure in-place. It is not essential that all portions of an underground storage tank system be permanently plosed in the same manner; however, all actions shall comply with the appropriate subsection of this section. Subsection (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.
- (b) Owners of Removal at underground storage tanks proposing to remove the underground storage tank shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safeta Code in addition to the following: Subsections (3) and (2) and elever Subsections (3) for (5) as appropriate

(1) All residual liquid, solids, or studges shall be removed. and Mandled as follows:

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- (2) If the underground storage tank contained a hazardous substance material that could produce flammable vapors at standard temperature and pressure, then the underground storage tank, either in part or as a whole, shall be eempletely purged of the flammable vapors to levels that would preclude explosion or such lower levels as may be required by the local agency.
- (3) When an underground storage tank or any part of an underground storage tank is to be disposed of, knak is described for examples at an also and also and also as a marardous makes for any part of the tank spared and also and part of the tank spared and is a marardous makes for any part of the tank spared and any managed and a spared and also as a makes after it has been properly disposed in a sixthet dased the owner must document to the Yocal agency that proper disposal has been completed.

An owner of an underground storage tank or any part
of an underground storage tank that is destined for

- a Specific rease shall identify to the local agency
  the future underground storage tank owner,
  operator, location of use, and nature of use.

  doubly with all of the following:
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- oberaroit Inservou et nae and harne et naet infure muderstavous erolase rauk empert fauk enuit igenkill ro kne loset seeds kne IBI lue ommer et en exterins magerslonus erolase
- (5) An owner of an underground starage bank or any part of an underground storage tank that is destined for reuse as scrap material shall identify this reuse to the local agency. Eshply with sil of the following before the widerground storage tank or any part of the widerground storage tank or any part of the widerground storage tank in removed from the facility which such temperating to the provisions of subsection (still of this section)

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- EES APPLE APPROPRIATE WARRINGS TO THE TANKE
- (c) Closure of underground storage tanks in place shall
  comply with the applicable provisions of Chapter 6.5 of
  Division 20 of the Health and Safety Code, in addition
  to all of the following:
  - (1) All residual liquid, solids, or sludges shall be removed. and Mandled as Inlieus.
    - NAMASSA TERRITA PROLES TOL THERE ARE OL
    - NE TO WENTHAUDY MOUNT LEGUELA LEGACIES OF STREETER
  - All piping associated with the underground storage

    bank shall be removed Mandled and disposed of

    unless removal might damage structures or other

    pipes that are being used and that are contained in

    common trench, in which case the piping to be

    closed shall be emptied of all contents and capped.

- that is closed pursuant to Subsection (2) of this subsection, shall be completely filled with an inert solid, that cannot be remoted, such as said of constrain unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank.
- (4) A notice shall be placed in the deed to the property. The notice shall describe the exact vertical and areal location of the closed underground storage tank, the hazardous substances it contained, and the closure method.
- (d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This semanstration can be based on the ongoing leak detection monitoring, verification ground water monitoring, or soils sampling performed during or immediately after closure activities.

If feasible, soil samples and 1 be taken and analyzed seconding to the following:

- thereof is removed, then soil samples from the soils immediately beneath the removed portions shall be taken. A separate sample shall be taken for every 200-square feet for inderground storage tanks or every 20 lineal feet of trench for piping, at a minimum.
- (2) If the underground storage tank or any portion thereof is not removed, then soils sampling pursuant to Section 2645 7874 of Article 4 of this subchapter shall be implemented, if feasible.
- (3) Soils shall be analyzed for all constituents of

  contained in the previously stored hazardous

  substances and their breakdown or transformation
  products.
- (e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this subchapter.

Authority: NASC 25288.2 Reference HASC 25286 Article S. Categorical and Site-Specific Variance Procedures

Adopt new section to read:

2680. Applicability

(a) This article sets up procedures for categorical and site-specific variances from the requirements & extinit 2828# 474 2828# for the construction and monitoring of new and existing underground storage tanks as described in Chapter 6.7 of Division 20 of the Health and Safety Code and Articles 3 and 4 of this subchapter. A site-specific variance, if approved for a variance. A categorical variance, if approved for a variance. A categorical variance, if approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific. These procedures are in addition to those established by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.-25288/3/4/ And 163

Section 2681 of this article specifies the procedures
that must be followed by the applicant and the State
Board for categorical variance requests.

that must be followed by the applicant, local agency, and the regional board for site-specific variance requests. Authority: H&SC 25288.2 Reference: H&SC 25288.3

(c) Section 2682 of this article specifies the procedures

#### Adopt new section to read:

#### 2681. Categorical Variances

- (a) A cutegorical variance allows is an alternative method of construction or monitoring which is applicable to more than one local agency jurisdiction. sits

  Application for a categorical variance shall be made by the permittee to the State Board or a form provided by the State Board.
- (b) Application for a categorical variance shall be made on a state application for a profited by the State Board and shall include, but not be limited to.
  - (1) A description of the provision from which the variance is requested.
  - (2) A description of the proposed alternative program, method, sevice, or process.
  - (3) A description of the region, area, or circumstances under which the variance would apply.
  - (4) Clear and convincing evidence that the proposed

- alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.
- (5) A list including names and aidresses of all Ideal
  againstes and persons known to the applicant who may
  be affected by or may be interested in the variance
  request.
- (6) A fee of \$25,000 An initial payment of \$11,000.
- (c) The applicant will be required to pay a fee based on the actual costs of considering the application. The State Board will bit the applicant for additional anticipated costs or refund any remaining part of the initial fee, if-necessary. Before the public hearing and before preparation of a desirion on the application
- (d) 181 The State Board shall review all applications
  supported and shall notify the applicant in writing
  within 30 days of receipt of the application as to
  whether or not the application is complete.
- (e) (a) The State Board shall complete any documents

  pecessary to satisfy the California Environmental

- Quality Act (Division 13, commencing with Section 21000, of the Public Resources Code).
- (f) 111 The State Board shall remand the application to be appropriate regional board if it determines that the application falls within Section 2682 of this article.
- (g) ffl The State Board shall hold at least 2 public hearings in different areas of the State within 180 days of receipt of a complete variance application to consider the request for a categorical variance. Motifee of the Mearings shall be presided at least 10 days in advance to any person who requests such motifee in writings. Motifee shall also be provided to all affected local agencies and to any person thom to be interested in the proceedings. The motifee shall specify the date; time, and location of the Mearings and shall include a description of the Mearings and shall include a description of the Mearings and shall include a description of the Mearings are placed in the mail at the Matter is matter; it shall be placed in the mail at least 11 days in advance of the Mearings.
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- (h) IN THE SECRETOR OF THE STATE BOARD WITT BE BASED ON THAT ENGERGE AND TESTIONS IN THE PECOFO OF THE NESTINGENT THE PECOFO MAY BE SUPPLEMENTED BY ANY OTHER PROCESSOR SECENTED BY THE STATE BOARD PURSUANT TO THE PROCESSOR OBTITUDE IN SECTION 2008 OF SUBENDANTED BY THE STATE BOARD OF A hearing, the presiding officer may keep the hearing record open for a definite time, not to exceed 30 days,

to allow any interested person to file additional exhibits, reports, or affiliavits.

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- (1) fkl If the State Board grants the variance, it will prescribe the conditions the applicant must maintain and will jescribe the specific elternative for which the variance is being granted.
- approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the variance applies, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the State Board provided all other permit conditions are met.

variance upon i firding that the proposed alternative does not adequitely protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The State Board shall will not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and Submapters 5 and 5 of this chapter.

60111064 NOTELIN for approval of a categorical variance.

The State Board shall notify all affected local agencies of the modification or revocation. And shall require the permits which were based on the categorical variance.



Adopt new section to read:

#### 2682. Site-Specific Variances

- (a) A site-specific variance allows is an alternative method of construction or monitoring which would be applicable at one or more sites within one local agency's jurisdiction. Isellity leestien Application for a site-specific variance shall be made by the permittee to the appropriate regional board on a form provided by the regional board.
- board, the permittee shall submit a complete construction and menitoring plan to the local agency.

  The proposed afternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods; or if the local agency does not act within 60 days of its receipt of the permittee's complete construction and monitoring plan the permittee may proceed with a variance application.

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  TO DECIDE WHITNEY TO JOIN THE APPLICANT IN THE MARTIANES

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- (c) Les Application for a site-specific variance shall be
  nade on a state application form provided by the
  appropriate Regional Board and shall include, but not be
  limited to:
  - (1) A description of the provision from which the variance is requested.
  - (2) A detailed description of the complete construction

    and monitoring methods to be used. The proposed

shall be clearly identified.

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- would rely to justify the findings necessary for the variance, as prescribed by the appropriate

  Supaccused 16 of section 2828813 of Chapter 6.1 of Division 20 of the Health and Safety Code.

- protect the soil and the beneficial uses of waters
  of the state from an unauthorized release.
- (5) Any documents necessary to satisfy the California

  Environmental Quality Act (Division 13, commending
  with Section 21000, of the Public Resources Code).
- (6) A fee of \$2,700 \$74750 for variance requests at one site. A fee of \$5,500 for variance request at more than one site within one local agency's jurisdiction.
- (d) (f) The regional board shall review all applications
  submitted and shall notify the applicant in writing
  within 30 days of receipt of the application as to
  whether or not the application is complete.
- (e) 183 The regional board shall hold a hearing on the proposed alternative within 60 120 days after receiving a complete variance application; however, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 5.7 of Division 20 3488662168 (c) 61 3662169 2828818 of the Health and Safety Code for local agencies to join in the

application. described in subscition (d) of this section! Matter of the heavings shall be provided at teast 10 days in advance to any person who requests shen notice in ariting! Motice shall also be provided to all affected included and included and to any person known to be interested in the proceedings! The rotice shall specify the advertion of the heaving; and shall included a description of the proposed extegorical variance. When the motice is malifed, it shall be placed in the dail at least 11 days in dayling; and hearing;

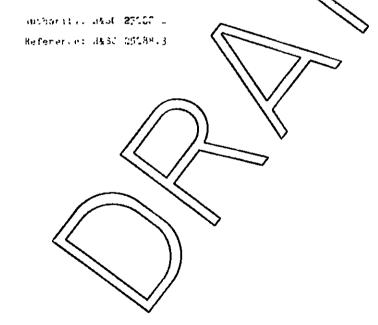
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- prescribe appropriate additional the conditions the applicant and the local agency of its decision.
- (g) 161 The regional board shall consider the local agency's, and the city's, county's, or city and county's recommendations in rendering its decision. The regional board shall consider the completeness and accuracy of the information provided by the applicant in Subsection (e) of this Section in fendering its decision.
- (h) (w) If the variance request is approved, the local agency shall resue a permit to the applicant which includes the conditions prescribed by the regional board. A local agency shall not modify the permit whiless it determines that the modification is consistent with the variance that has been granted.
- upon a finding that the proposed alternative does not

reduction process in a cold and the territorial cold and the water, of the date from an unauthorized release.

The regional boso small all not modify or revoke the territorial until it an fortuned procedures comparable to those prescribed in this Section and Subchapters 155 and Cof this chapter. Editional board shall notify the regional board shall notify the regional material of the modification or resocution. And shall reserve the modification of resocution.



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Adopt now senting to read

2690. Applicability

request state Board authorization for more arrangent standard, than those set by Arrivia 2 And A 21 inc. the subchapter. These procedures are in audition to those established by Chapter 6.7 of Division 20 8088448104 2826818881.06 the health and Safety Code.

Authority: 48:0 25'8842 Reference 48:0 25'88.3 Adopt new section to read:

#### 2691. Additional Standards Request Procedures

- (a) Local agency application for additional standards shall include:
  - (1) Description of the proposed design and construction standards which are in addition to those described in Article 3 of this subchapter.
  - clear and convincing evidence that the additional standards are necessary. Clear and convincing evidence that the additional standards and would adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases.
  - (3) Any documents required by the California

    Environmental Quality Act Olivision 13, commencing
    with Section 21000 of the Public Resources Code).
  - 4 166 of \$14(800 Am initial fee of \$5,500.
- (b) The applicant shall will be required to pay a fee based on the actual costs of considering the application. The

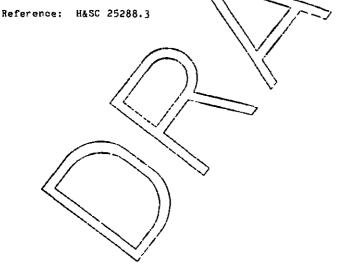
- State Board will bill the applicant for additional anticipated costs or refund any remaining part of the initial fee, if necessary. Before the public Mearing and Before preparation of a decision on the application
- (c) (b) The board shall will conduct an investigation and public hearing on the proposed standards and their need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implement additional standards. The metice and exher procedural requirements contained in Sections (a) through (d) of Article 8 of this subspacer shall applied
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(d) (f) The board may modify or revoke a previously issued authorization allowing the implementation of additional standards if it finds that, based or new evidence, the additional standards are not necessary to adoquately protect the soil and beneficial uses of the waters of the state from unauthorized releases. The board shall Will not modify or revoke the authorization until it has followed procedures comparable to those presented in Subchapters 1.5 and 6 of this chapter. Willined Merein for issuance of the authorization!

Authority: H&SC 25288.2



Article 10. Permit Application, Annual Report and Trade Secret Requirements

Adopt new section to read:

#### 2710. Applicability

- (a) This article describes specific administrative actions that must be accomplished by all underground storage tank owners, local agencies, and the State Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by \$46226#4 282834 2828344 28283424 25283/84 25283/84 25283/84 and 25288/2 Chapter 6.7 of Division 20 of the Nealth and Safety Code.
- ection 2710 of this arbicle lists the information that must be submitted by the underground storage tank owner the local agency as part of the permit application. and the requirements for the local agency to submit the beauth application to the Brute Board
- (c) Section 2712 of this article describes the conditions that Local agencies must include in all permits issued and conditions which local agencies must meet prior to

#### permit issuance.

- (d) Section 2713 of this article describes the annual report requirements for MONN MARK OWNEYS AND local agencies.
- must be met by a tank owner when requesting trade secret provisions for any information submitted to the local agency, State Board, regional board. It also specifies how the local agency, the State Board, or regional board shall consider the request and how they shall maintain the information of the Grade secret request is accepted.

Authority: H&SC 25288.2

Reference: II&SC 25283, 25283.1, 25283 2 25283.4, 25283.5,

25283.6, 25284.2

Adopt new section to read:

2711. Permit Application and Information

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- (a) (b) The permit application shall include, but not be limited to, the following information if it is accurately known to the permit applicant:
  - (1) The name and address of the person who firm(
    especialist of th
  - 2) The name, location, mailing address, and phone number and type of facility where the underground storage tank is located and type of business.
  - The name, address, and telephone numbers of the underground storage tank operator and 24-hour

#### emergency contact person.

- (4) The name and telephone number of the person making the application.
- (5) Description of the underground storage tank

  description analyding, but not limited to,

  underground storage tank and auxiliary equipment

  manufacturer, year of manufacture, paparity,

  history of repairs, and operation methods schedule.
- installed with systems for secondary containment utilizing membrane liners, a certification by the membrane liner material manufacturer that the memorane liner meets the standards set forth in Section 2031 (2) and (3/1) and (2) of Article 3, or if applicable, Section 2003 (e)(1) and (2) of Article 3; and a certification by the membrane liner febricator that the membrane liner meets the standards set forth in Section 2031(c) and (3/3) of Article 3.
- (7) the tracestours storage tark tranks piping and auxilitary equipments Construction setails of the

underground storage tank and any auxiliary
equipment including, but not limited to, type and
thickness of primary containment, type and
thickness of secondary containment (if applicable),
installation procedures and backfill, liming,
wrapping, and cathodic protection methods (if
applicable).

- (3) (1) A diagram or lession or as-built drawing which indicates the location of the underground storage tank (underground storage tank piping, auxiliary equipment) with respect to buildings or other landmarks.
- program including, but not limited to, the following where applyinable:

(A) Visual:

- (B) Inderground storage tank testing or inspection procedures;
  - Invertory recordilitation ######## including gauging and reconcilitation methods;

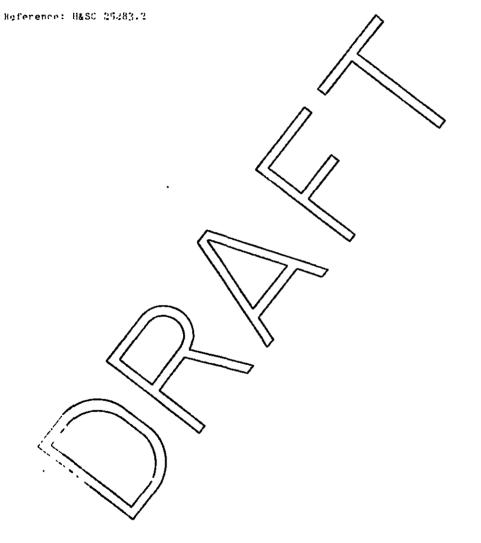
- (D) Soils sampling locations and methods and analysis procedures;
- (E) Vadose zone sampling locations and methods and analysis procedures;
- (F) Ground water well(s) locations, construction
  and completion methods, sampling, and analysis
  procedures; and
- (G) Frequency and sensitivity of any monitoring method sensing instrument or analytical method.
- (10) (9) A list of all the substances which previously,

  ourrently, or are proposed to be stored in the

  underground storage tank of tanks.
- storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the underground storage tank.

- (12) [11] The permit application must be signed by:
  - (A) A principal executive officer at the level of vice-president or by an authorized representative. The representative must be responsible for the overall operation of the facility where the underground storage tank(s) are located;
  - (B) A general partner proprietor; or
  - (C) A prirotpal executive officer, ranking elected official, or authorized representative of a public agency.
- (b) The application shall be accompanied by the a fee set by
  the local agency. The last agency may require a fee
  to cover necessary and responsible costs of permitting
  and inspection of the underground storage tank! This
  fee shall include a surcharge determined annually by the
  testisture to cover the costs of State Board in
  carrying out its responsibilities under these
  regulations!

Authority: H&SC 25288.2



Alopt rew section to read

27.15. Permit forditions

storage trank, the permittee shall report to the local
agence, which he permitting authority within at least 30
days after prior to the what and charge in the page
of any underground storage tanks, including:

(1) Inc storage of rew hazarlous substances;

(2) Charges in moritoring procedure; or

underground storage tark.

storage tark, the permittee shall report to the local agency any unauthorized release courrences, as defined in Article 2 of this subchapter, within the time frame apeaufied in subsections Tool(b) and (c) of Article 5 of this subchapter.

(3) Written records of all monitoring performed shall be

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maintained on-site by the operator for a period of at least 3 years from the date the monitoring was performed. The local agency may require the submittal of the monitoring records or a summary at a frequency that they may establish. The written records of all monitoring performed in the past 3 years shall be shown to the local agency, regional board, of State Board or duly authorized representative upon demand during any site inspection. Monitoring records 70.00 april 100 decimals of the shall include:

- (1) The date and time of all monitoring or sampling;
- (2) Monitoring equipment calibration and maintenance records;
- (3) The results of any visual observations;
- (4) The results of all sample analysis performed in the laboratory or in the field, Including laboratory data sheets;
- (5) The logs of all readings of gauges or other monitoring equipment, ground water elevations, or other test results; and

- (6) The results of inventory readings and reconciliations.
- (d) A permit to operate issued by the local agency shall be effective for 5 years. A local agency shall not issue a permit to operate an underground storage tank until the local agency inspects the underground storage tank and determines that the underground storage tank complies with the provisions of these regulations. The underground storage tank owner shall apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit.
- (e) The local agency shall have 18 months after it

  establishes a program implementing this subchapter to

  issue permits for all existing underground storage
  tanks.
- storage tank owners if the new underground storage tank
  owner does not change any conditions of the permit, and
  the transfer is registered with the local agency within
  30 days of the change in ownership, by submittal of a
  revised permit application listing the new sweet and any
  necessary modifications are made to the information in

the initial permit application due to the change in ownership. A local agency may review, modify, or terminate the transfer of the permit to operate the underground storage tank upon reserving the ownership transfer request.

ITT IT AT WILLTGIOWIZ SETTAGE LAND ALES NOT FEMPLEXELS editorn with Articles & or 4 of this subsidistant a Tucal afeacht ar ire dischesiont day issue a becatstous permit subject to tenditions specified by the local agersy and providing such a permit would kok be dertinental to the publishs irrevesti Ine educations snally at a minimum/ inexage a-rime-senedule for upgrading the underground genrage tank such that it eduldrus with articles o at A at this subsidision or is eleses parsuary to Article ! of this substrictors These Kine Reneanies ausis has exceed arious the uneariou of whe providigital permiti - A providional permit will be thened tor no touger than one tear with a quetribe extersior of six morens enree merchs and tannor be rangued or extended. The local agency shall inspect the underground skotäge kank purbuank ka kne profisions of Spacetion 181 of this section within 80 18 says of the expression of the provisional permit to assure that the belutk sakristene name neen wert

The local agercy shall rot renew an univerground storage tark parmit urless the underground storage tark has been inspected within the prior 3 years and the inspection revealed that the underground storage tank complies with Article 3 or 4, as applicable, of this subchapter, as applicable, and with all existing permit conditions.

Ine inspection shall be conducted as specified in the appropriate subsection of Chapter 6.7 of Division 20 of the Health and Safety Code. Symbolizion (N) of UNIS Section in the local agency must verify by a follow-up inspection pursuant to an important and section in the local agency must verify by a follow-up inspection pursuant to an important that all required corrections have been implemented before renewing the permit.

TEDOLE MUTEN MAS COMESTU LECOMMENDES CONCESSIONS ENGTIT OF THE INSPECTION OF CODA OF THE SPECTAT INSPECTOR. OF SERVING TO SERVING THE SPECTAT INSPECTOR CONGRETS WAS ONCONTINUED OF THE DELMIK NOTION OF THE SECTION WAS BE
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  - THE DETERMINE WHETHER THE SPENSOR HAS WONTROVED AND
  - TH E PRINT OPERATING CONSTRUCTOR STOLAGE THE TR
- (h) (1) Within 30 days of receiving an inspection report

  from either the local agency or the special inspector,

  the permit holder shall file with the local agency a

  plan and time schedule to implement any required

  modifications to the underground storage tank or to the

monitoring plan needed to achieve compliance with either Article 3 or Article 4 of this subchapter, as appropriate, or the permit conditions. This plan and time schedule shall also implement all the recommendations of the special inspector. The local agency may exempt the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that the failure to implement the recommendation will not cause an unauthorized release.

Authority: H&SC 25288.2

Reference: H&SC 25283, 26283 1, 25283.4, 25283.5, 25284.2

Adopt new section to read:

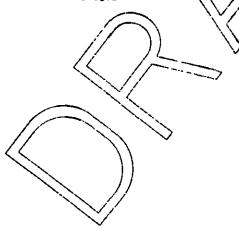
#### 2713. Annual Report

(a) The local agency shall notify the State Board of any changes in permits as defined in Subsections (a) or (f)

141 of Section 2712 of this article or any unauthorized releases as defined in Article 2 of this subchapter annually on the State Board annual report forms or other methods determined by the State Board. Fhis information shall be submitted to the State Board by March 1 of each year covering the prior calendar year.

Authority: H&SC 25288.2

Reference: H&SC 25283.2



Adopt new section to read:

#### 2714. Irate Secret Provisions

- (a) Any person providing information in an application for a permit to operate an underground storage tank or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the persor believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:
  - (1) Which portions of the information submitted are believed to be severally a trade secrets;
  - (2) How long this information should be treated as confidential;
  - (3) Measures that have been taken to protect this information as confidential; and
  - discussion of why this information is a trade

    | secret including references to statutory and case |
    | law as appropriate.

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- (b) If the local agency, the State Board, or the regional board determines that a request for confidentiality is clearly valid, the material shall WIII be given trade secret protection as discussed in Subsection (f) of this section.
- (c) If the local agency, State Board, or the regional board determines that the request for confidentiality is clearly frivilous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the local agency. State Board, or the regional board is instructed otherwise by a court within 10 days of the date of the letter.

SECTION 25283/6/6/ of the Health and Safety Code and Issue its decision. If the local agercy, the State Board, or the regional board determines, that the information is not a trade secret, it shall will act in accordance with Subsection (cf) of this section. Seeks a letter to the applicant stateng that the information is not a trade secret, it shall will act in accordance with Subsection (cf) of this section. Seeks a letter to the applicant stateng that the local agency or the State Board or Regional Board will treat the information as such unless the total agency or the State Board or the Regional Board is instructed otherwise by a court althir 10 says of the date of the texter!

- (e) All information received for which trade secrecy status

  is requested shall be treated as confidential as

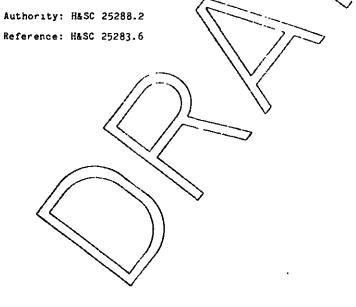
  discussed in Subsection (f) of this section until a

  final determination is made.
- regarding which a final determination has not been made,
  shall be immediately filed in a separate "confidential"

  file. If a document or portion of a document is filed
  in a confidential file, a notation should be filed with
  the remainder of the document indicating that further
  information is in the confidential file.

(g) Information contained in confidential files shall only
be disclosed to authorized representatives of the
applicant or other governmental agencies only in
connection with the State Board's, the regional board's
or local agency's responsibilities pursuant to Chapter
6.7 of the Health and Safety Code or Division 7 of the
Water Code.

(h) Nothing contained herein shall Limit an applicant's right to dbrain prevent systemrish of draplosure of information pursuant to other provisions of law.



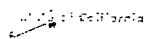
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APPENDIX I, TABLE A SUGGESTED SPECIFICATIONS APPLICABLE TO REGULATORY REQUIREMENTS

SECTION NUMBER		
2631(3)(1)	ASTM D-814,	"Rubber Property - Vapor Transmission of Volatile Liquids"
2631(j)(2)(A)	ASTM D-543,	Resistance of Plastics to Chemical Reagents
2631(j)(2)(B)	ASTM D-751,	"Coated Fabrics"
2631(j)(2)(C)	ASTM D-2240,	Rubber Property - Durometer Hardness"
2631(j)(2)(D)	ASTM D-2684.	Determining Permeability of Thermo- plastic Containers
2635(b)(1)	ASME.	"ASME Pressure Vessel Code, Section VIII, Division T, Boiler and Pressure Vessel Code"
	UL58.	Steel Underground Tanks for Flammable and Compustible Liquids
ر	UL1316,	Glass Fiber Reinforced Plastic Under- ground Storage Tanks for Petroleum Products
	DLC-3615-1977.	"Standard for Reinforced Plastic Under- ground Tanks for Petroleum Products"
2635(b)(2)	ASTN-G-1-72.	Standard Recommended Practice for Preparing, Cleaning, and Evaluating Test Specimens
	ASTM G-31-72,	"Standard Recommended Practice for Laboratory Immersion Corrosion Testing of Metals"
	ASTM D-4021-81.	"Standard Specifications for Glass-Fiber- Reinforced Polyester Underground Petroleum Storage Tanks"
	NACE TM-10-69.	"Laboratory Corrosion Testing of Metals for the Processing Industry"
	NACE TH-02-70,	"Method for Conducting Controlled Velocity Laboratory Corrosion Tests"
2661(c)(2)(B)	API 1631.	"Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks"

6. Draft regulation package as adopted by the SWRCB and disapproved by OAL

a. Transmittal memo to OAL and Face Sheet dated March 1, 1985



## Memorandum

Linda Stolldale Brewer, Director Office of Administrative Law 1-14 % Street, Smite 600 Sacromonio, CA 96814 Date : MAR L 1925

From : STATE WATER RESOURCES CONTROL BOARD

Subject :

SUBMISSION OF REGULATIONS GOVERNING UNDERGROUND STORAGE OF HAZARDOUS SUBSTANCES TO BE CODIFIED IN SUBCHAPTER 16 OF CHAPTER 3 OF TITLE 23 OF THE CALIFORNIA ACMINISTRATIVE CODE

On January 18, 1985, the State Water Resources Control Board (State Board) adopted regulations governing underground storage of hazardous substances pursuant to a Notice of Proposed Rulemaking published in the California Administrative Notice Register (Register) on August 24, 1984. Attached please find a copy of State Board Resolution Number 85-6, seven copies of the regulations adopted by that resolution, and a copy of the rulemaking file, as required by Government Code Section 11347.3.

Section 25299.3 of the Health and Safety Code [formerly Section 25288.2] directs the State Board to develop regulations which implement, interpret, and make specific the standards applicable to underground storage of hazardous substances pursuant to Chapter 6.7 of Division 20 of the Health and Safety Code [Underground Storage of Hazardous Substances, commencing with Section 25280]. These regulations contain requirements for underground storage tack construction and closure, monitoring alternatives, performance standards for underground storage tack repairs, and procedures for categorical, and site-specific variances from the prescribed standards. These regulations will be implemented through permit programs administered by local agencies.

Cities and counties which, prior to January 1, 1924, had adopted ordinances implementing the statutory standards and were issuing permits for underground storage tanks are exempt from any obligation to implement the provisions of the regulations. However, a number of cities and counties did not adopt such ordinances and will be required to follow and use these regulations. The statutory deadline for local agencies and existing underground storage tank owners to implement either the specified provisions of the statute or these regulations is July 1, 1985. The local agencies need these regulations as soon as possible to implement a regulatory program by the deadline. Therefore, the State Board asks that your staff accelerate its review of the regulations and that you grant the State Board's request for an immediate effective date on approval.

The State Board will notify local agencies implementing the underground tark program and affected underground storage tank owners that the regulations are in effect and alert them to the July 1, 1985 deadline. The State Board can use its extensive mailing list of all local agencies and interested

parties with respect to underground storage tanks for notification. The State Sound also has the statewide underground storage container inventory from which underground storage tank expens can be notified. Local agencies have the means to notify underground storage tank expens through building permits and contact with trade associations. An early effective date for the regulations will greatly enhance the tank owners' ability to comply with the statutory deadline of July 1, 1935. Early availability of the regulations will facilitate local implementation as well as provide consistency and certainty to underground storage tank owners and operators.

Attached to this memorandum is an index to the rulemaking file. Please note that the rulemaking file incudes ancillary correspondence which was received after the various comment periods were closed or which was not relevant to issues related to the proposed rulemaking. Comments in such ancillary correspondence were not summarized or addressed in the final Statement of Reasons. Subsection 2672(c)(4) of the regulations as adopted on January 18, 1985 is not submitted to OAL at this time. In response to comments processed after the State Board adopted Resolution Number 85-6, staff will recommend amendment of the adopted regulations to delete requirements that deeds be altered to notify subsequent purchasers of the existence of closed underground storage tanks.

The State Board's formal rulemaking process has taken over six months and has involved two public hearings, a Board workshop, a public meeting, and an extensive amount of public participation, including six informal workshops with interested parties.

Please review this rulemaking package as required by Government Code Section 11349.1. If you have any questions regarding this matter, do not hesitate to call me at 445-1553, or John W. Richards of the State Board's Office of the Chief Counsel at 322-7732.

Michael A. Campos Executive Director

Attachments

bcc: Board Members

Nike Campos Walt Pettit Bill Attwater

DWQ/pd

## FACE SHEET

(OAL-4)

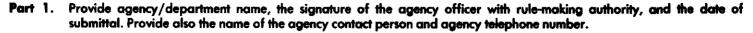
## FOR FILING ADMINISTRATIVE REGULATIONS WITH THE OFFICE OF ADMINISTRATIVE LAW

1. The attached are true and correct copies of regulations adopted, amended or repealed by: State Water Resources Control Board Michael A. Campos, Executive Director (Date) LEAVE BLANK LEAVE BLANK AGENCY CONTACT PERSON AND POSITION TELEPHONE 322-7732 <u>John W. Richards. Staff Counsel</u> 2. Indicate California Administrative Code Title and specify sections to be amended, adopted, and/or repealed: SECTIONS AMENDED Title: 23 SECTIONS ADOPTED 2610-2714 SECTIONS REPEALED 3. Type of Order: a. 🔽 Regular b. Li Emergency (Attach Finding of Emergency) c. Other Regulatory Actions: Certificate of Procedural and Organi-**Editorial Authority and Reference** Citation Changes Compliance **zational Changes** ☐ Correction d. How many of the regulatory changes in this order are the result of the agency's review of existing regulations? (See instructions in Part 3 on reverse.) None □ Some e. Is this order a resubmittal of previously disapproved or withdrawn regulations? f. Do these regulations contain building standards as defined in Section 18909 of the Health and Safety Code? ☐ Yes x No g. Are these fire and panic safety regulations requiring state Fire Marshal approval? Yes No (If yes, attach State Fire Marshal approval) h. For Conflict of Interest Regulations only Contains FPPC approval stamp 4. Effective date of regulatory changes: (See Government Code Section 11346.2 and instructions on reverse) a. Effective on the 30th day after filing with the Secretary of State. \_as required by statutes: (list) c. X Effective on Approval ...{Designate effective date earlier than 30 days after filing with the Secretary of State pursuant to Government Code Section 11346.2(d).) Required statement attached (See cover letter) \_\_(Designate effective date *later than* 30 days after filing with the Secretary of State.)

#### **INSTRUCTIONS FOR STD 400**

(OAL-4)

Instructions for completing the Face Sheet for transmitting copies of regulations to the Office of Administrative Law felling with the Secretary of State.



- Part 2. In the space provided indicate the Administrative Code Title of the regulations and list the sections to be amended, adopted, and/or repealed. (Attach additional sheets if necessary.)
- Part 3. Check the appropriate box to indicate the type of order submitted. If other than a regular or emergency filing is submitted, check the appropriate box under "Other Regulatory Action." Note: Orders designated as Procedural and Organizational Changes, Editorial Corrections and Authority and Reference Citation Changes must all be reviewed by OAL and are subject to OAL approval.

If the regulation order contains changes which are a result of the review of existing regulations, the agency should clearly designate those portions of the order. This may be indicated in Part 2 of this Face Sheet or in a cover memo.

#### Part 4. Effective dates—check:

- a. If regulations are to be effective 30 days after filing with the Secretary of State.
- b. If an effective date other than a. is required by statute, provide the date and the statutory citations.
- c. If an effective date earlier than a. is being requested under Government Code Section 11346.2(d), this file must contain a statement indicating why the early effective date is necessary; what steps if any the agency will take to notify affected persons; how affected persons will otherwise receive notice of the effective date; and the impact if any which the earlier effective date will have on the ability of affected persons to comply with the regulations.
- d. If an effective date later than a. is requested, provide the date.

#### Filing Requirements

The following material must be submitted when filing regulations with OAL:

- Seven (7) copies of the regulations in underline/strikeout format with authority and reference citations beneath each regulation.
- A completed Face Sheet for Filing Regulations With the Office of Administrative Law, form STD 400 (OAL-4), attached to the
  front of each copy, with at least one Face Sheet containing an original signature.
- Complete rule-making file, with index and sworn statement, as required by Government Code Section 11347.3.

#### **Rule-making file contents:**

- (1) Any copies of petitions received from interested persons proposing the adoption, amendment or repeal of the regulation.
- (2) All published notices of proposed adoption, amendment, or repeal of the regulation.
- (3) All of the requirements of Government Code Section 11346.7, including:
  - (a) An initial statement of reasons for proposing the adoption or amendment of a regulation;
  - (b) A final statement of reasons with a summary of objections or comments, together with the agency's response to the objections or comments; and
  - (c) An updated informative digest containing a clear and concise summary of already existing laws and regulations and the effect of the adopted, amended or repealed regulation.
- (4) All data and other factual information, any studies or reports and written comments submitted to the agency in connection with the adoption, amendment, or repeal of the regulation.
- (5) All data and other factual information, technical, theoretical, and empirical studies or reports, if any, upon which the agency is relying in the adoption, amendment, or repeal of a regulation.
- (6) A transcript, recording or minutes of any public hearing connected with the adoption, amendment, or repeal of the regulation.
- (7) Any other information, statement, report or data which the agency is required by law to consider or prepare in connection with the adoption, amendment, or repeal of a regulation, including a copy of the version of the regulations made available for public comment if different from the regulations as adopted.

b. SWRCB Resolution No. 85-6, dated January 18, 1984

Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations 1985

STATE WATER RESOURCES CONTROL BOARD RESOLUTION 20. 85-6

ADOPTION OF REPLATIONS GOVERNING STORAGE OF HAZARDOUS SUBSTANCES IN INDERGROUND STORAGE TANKS TO BE CODIFIED IN SUBCHAFTER 16 OF CHAPTER 3 OF TITLE 23 OF THE CALLFORNIA ADMINISTRATIVE CODE (23 CAC SECTIONS 2610-2714)

#### GREREAS:

- Chapter 6.7 (commencing with Section 25280) was added to Division 20 of the Health and Safety Gode by Chapter 1046 of the Statutes of 1983 (AB 1362, Sher).
- Chapter 6.7 establishes standards for construction, repair, closure, and, nonitoring of underground storage tanks used for storage of hazardous substances and require, reporting of unauthorized releases. Chapter 6.7 was arounded and recognized by Chapters 1608, 1537, and 1584 of the Statutes of 1984 (AP 1565, 3447, and 3781, Sher).
- Sections 25299.3 of the Health and Cofety Code directs the State Ecard to Cevelop regulations implementing the standards of Sections 25291, 24292, 25294, 25295, 25293, 19368, and 25297.4" by Jacuary 1, 1985.
- Section 25299.3 of the Health and Safety Jode authorizes the State Board to develop regulations implementing Sections 25287, 25230, and 25293.
- 2. A totice of Proposed Fil making restribing prepased regulations governing to, a underground accordent toma was protected in the California Administrative. Charles Register on Administrative of the California Register on Administrative of the proposed regulations and initial Statement of the Religious were distributed to interested persons and organizations.
- Staff held a series of informal workshops in August and September 1984 to solicit input from the regulated community.
- 7. The State board held a public hearing or October 23, 1984 and a workshop on November 2, 1984 to year testimony and discuss the comments of lateristic persons. One 158 persons submitted written comments and 36 persons estimated at the bearing.
- 2. It is not the process for melations, as modified to reflect many of the comments rangined, who made arbitable to the public on November 9, 1984 and additional comments were relicited. The State Board held a second public fearing on Processes 27, 1 64.

- 9. Staff has further modified the text of the proposed regulations in response to comments received. This text was made available to the public before the end of 1984, more than 15 days before date of this Board Meeting, for review and comments.
- 10. All modifications are sufficently related to the text made available to the public in the Notice published on August 24, 1984 that there was adequate notice to the public that the modifications could have resulted from the original proposed regulations through the rulemaking process.
- 11. Staff has proposed non-substantive editorial changes in the final text of the proposed regulations. A list of these changes was made available at the Board Meeting held on January 18, 1985.

#### THEREFORE BE IT RESOLVED:

- 1. That the proposed regulations governing storage of hazardous substances in underground storage tanks, as modified and attached to this resolution as Attachment 1, be adopted and codified as Subchapter 16 of Chapter 3 of Title 23 of the California Administrative Code (23 CAC Sections 2610-2714, together with Appendix I).
- 2. That the Executive Litector transmit the proposed regulations as adopted to the Office of Administrative Law, together with the final Statement of Reasons and a copy of the State Board's rulemaking file.

#### CERTIFICATION

The undersigned. Executive Director of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Esset held on January 18, 1935.

Michael A. Campos Executive Director c. Text of draft regulations adopted by the SWRCB on January 18, 1985

### UNDERGROUND TANK REGULATIONS

# CALIFORNIA ADMINISTRATIVE CODE TITLE 23 WATERS CHAPTER 3 WATER RESOURCES CONTROL BOARD SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

# JANUARY 18, 1985

′	Article 1	General
2.	Article 2	Definition of Terms
5	Article 3	New Underground Storage Tank Construction and Monitoring Standards
."	Article 4	Existing Underground Storage Tank Monitoring Standards
	Article 5	Release Reporting Requirements
• •	Article 6	Allowable Repairs
<i>:</i>	Article 7	Closure Requirements
, \$	Article 8	Categorical and Site-Specific Variances
-	Article 9	Local Agency Additional Standards Request Procedures
,	Article 10	Permit Application, Annual Report, and

#### UNDERGROUND TANK REGULATIONS

#### CALIFORNIA ADMINISTRATIVE CODE TITLE 23 WATERS SUBCHAFTER 16 UNDERGROUND TANK REGULATIONS

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1

#### Article 1. General

Adopt new section to read:

#### 2610. Applicability

- (a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks, establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for release reporting, repair, and closure requirements; and specify variance request procedures.
- (b) Persons who own one or more underground storage tanks
  storing hazardous substances shall comply with these
  regulations except as provided in Section 261; of this
  article. If the operator of the underground storage tank is
  not the owner, then the owner shall enter into a written
  contract with the operator requiring the operator to:
  monitor the underground storage tank; maintain appropriate
  records; implement reporting procedures as required by the
  permit; and properly close the underground storage tank as
  required by the permit.

- (c) Counties shall implement the regulations in this subchapter within both the incorporated and unincorporated areas of the county through the issuance of permits to underground storage tank owners. A permit may be issued for each underground storage tank, several underground storage tanks, or for a facility. A city may, by ordinance, assume the responsibility for implementing the provisions of this subchapter within its boundaries.
- (d) All owners of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this subchapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this subchapter. In addition, all owners and/or operators of underground storage tanks subject to this subchapter must comply with the release reporting requirements of Article 5 of this subchapter, the closure requirements of Article 7 of this subchapter, and the permit application requirements of

#### Article 10 of this subchapter.

Authority: Health and Safety Code (H&SC) 25299.3

Reference: Health and Safety Code (H&SC) 25283, 25284,

25299.1, 25299.3

Adopt new section to read:

#### 2611. Exemptions

- (a) The owners of underground storage tanks that meet any of the following conditions shall be exempt from the provisions of this subchapter.
  - (1) enderground storage hanks that are located within the furisdictions of counties or cities where the county or city had, prior to January 1, 1984, adopted an ardinance which, at a minimum, implements the requirements of Subchapter 6.7 of Division 20 of the Health and Safety Code pertaining to construction and achitoring standards for new and existing underground storage tanks provided that:
    - (A) The ordinance, as it may be amended, continues to meet, at a minimum, the requirements of Chapter

      6.7 of Division 20 of the Health and Safety Code;
      and
    - (3) The county or city issues permits for underground storage tanks pursuant to the ordinance.

- (2) Underground storage tanks containing hazardous wastes

  as defined in Section 25316 of the Health and Safety

  Code if the person owning or operating the underground

  storage tank has been issued a hazardous waste

  facilities permit for the underground storage tank by

  the Department of Health Services pursuant to Section

  25200 of the Health and Safety Code or granted interim

  status under Section 25200.5 of the Health and Safety

  Code.
- (b) Sumps which are a part of a monitoring system as required under Article 3 of this subchapter are considered part of the secondary container or leak detection system of the primary container and are required to meet the appropriate construction criteria.

Authority: H&SC 25299.3

: i

Reference: H&SC 25281, 25299.1

#### Article 2. Definition of Terms

Adopt new section to read:

#### 2620. Applicability of Definitions

- (a) Terms used in this subchapter shall have the definitions

  provided by the appropriate section of Chapter 6.7 of

  Division 20 of the Health and Safety Code, or by Section

  2621 of this article.
- (b) The following terms are defined in the appropriate section

  of Chapter 6.7 of Division 20 of the Health and Safety Code:

Board

Department

Facility 5 4 1

Hazardous substance

Local agency

Operator

Owner

Person

<u>Pipe</u>

Primary containment

Product-tight

Single-walled
Special inspector
Storage/store

Unauthorized release

Underground storage tank

Authority: H&SC 25299.3

Reference: H&SC 25281, 25282, 25291

Adopt new section to read:

2621. Additional Definitions

The following definitions shall apply to terms used in this subchapter.

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day.

"Double-walled tank" means a container with two complete shells
which provide both primary and secondary containment. The outer
shell must provide structural support and must be constructed
primarily of non-earthen materials including, but not limited to,
concrete, steel, and plastic.

\*Existing underground storage tank\* means any underground storage tank that is not a new underground storage tank. The term includes any underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e., it had not been removed or completely filled with an inert solid.

"Membrane liner" means any membrane sheet material fabricated

into a system for secondary containment.

"Membrane manufacturer" means the company which processes the constituent polymers into membrane sheeting from which the membrane liner is Mabricated into a system for secondary containment.

"Membrane liner fabricator" means the company which converts the liner membrane sheeting into a system for secondary containment.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn.

"Motor vehicle fuel tank" means an underground storage tank that contains a product which is intended to be used primarily to fuel motor vehicles or fuel an engine.

"New underground storage tank" means any underground storage tank
subject to this subchapter which is installed after the effective
date of this subchapter or complies with the requirements of
Article 3 of this subchapter; or was installed after January 1,
1984, and before the effective date of this subchapter pursuant
to a permit issued by the local agency implementing the
provisions of Chapter 6.7 of Division 20 of the Health and Safety
Code relating to new underground storage tanks.

"Substantially beneath the surface of the ground" means that at least 10 percent of the underground storage tank volume, including connected piping, is below the ground surface.

"Unauthorized release" as defined in Chapter 6.7 of Division 20 of the Health and Safety Code does not include intentional withdrawals of hazardous substances for the purpose of legitimate sale, use, or disposal.

Authority: H&SC 25299.3

Reference: H&SC 25281, 25282, 25283

# Article 3. New Underground Storage Tank Construction and Monitoring Standards

Authority: 45SC 25299.3

Reference: H&SC 25281, 25291

Adopt new section to read:

#### 2630. Applicability

- (a) This article contains statewide minimum standards for the construction, installation, and monitoring of new underground storage tanks that contain hazardous substances.
- (b) Sections 2631 and 2632 of this article specify construction and monitoring standards for all new underground storage tanks. New underground storage tanks that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections 2633 and 2634 of this article in lieu of those specified in Sections 2631 and 2632 of this article, respectively. However, if the construction standards in Section 2633 of this article are used, then the monitoring standards of Section 2634 of this article must also be used.
- (c) All new underground storage tanks and secondary containers

  must comply with Section 2635 of this article.

3.2

Adopt new section to read:

- 2631. Construction Standards for New Underground Storage Tanks
- (a) Primary and secondary levels of containment shall be required for all new underground storage tanks used for the storage of hazardous substances as defined in Article 2 of this subchapter.
- (b) All primary containers shall be product-tight.
- (c) All secondary containers shall be constructed of materials of sufficient thickness, density, and composition to prevent structural weakening of the secondary container as a result of contact with any released hazardous substance and shall be capable of containing any unauthorized release of the hazardous substance stored within the primary container(s) for at least the maximum anticipated period sufficient to allow detection and removal of the unauthorized release.
- (d) If a hazardous substance has come into contact with the

  secondary container and either additional primary containers

  exist within the secondary container or the leaking primary

  container is repaired as specified in Article 6 of this

subchapter or closed as specified in Article 7 of this subchapter and replaced by a new primary container, the owner shall demonstrate to the satisfaction of the local agency that the requirements of Subsection (c) of this section are still achievable or replace the secondary container.

- (e) The secondary container shall have the ability to contain the following volumes:
  - (1) At least 100 percent of the volume of the primary container where only one primary container is within the secondary container.
  - (2) In the case of multiple primary containers within a single secondary container, the secondary container

    shall be large enough to contain 150 percent of the volume of the largest primary container placed in it, or 10 percent of the aggregate internal volume of all primary containers in the secondary container, whichever is greater.
- (f) If the secondary container is open to rainfall, then it

  shall be able to accommodate the volume of precipitation

  which could enter the secondary container during a 24-hour,

- 100-year storm in addition to the volume of hazardous substance storage required in Subsection (e) of this section.
- The volumetric requirements for the pore space of a granular material placed in the secondary container as backfill for the primary container shall be equal to or greater than that required in Subsection 2631(e) of this section. The available pore space in the secondary container backfill shall be determined using appropriate engineering methods and safety factors and shall consider the specific retention and specific yield of the backfill material, the location of the primary container within the secondary container, and the proposed method of operation for the secondary container.
- (h) The secondary container shall be equipped with a collection system to accumulate, temporarily store, and permit removal of any precipitation, subsurface infiltration, or hazardous substance released from the primary container.
- (1) The floor of the secondary container shall be constructed on

  a firm base and, if necessary for monitoring, shall be

  sloped to a collection sump. One or more access casings

  shall be installed in the sump and sized to allow removal of

- collected liquid. The access casing shall extend to the ground surface, be perforated in the region of the sump, and covered with a locked waterproof cap. If this access casing is within a secured facility, the requirements for a locked cap may be waived by the local agency. The casing shall be thick enough to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.
- (j) Systems for secondary containment utilizing membrane liners shall meet the following requirements:
  - (1) The membrane liner shall have a permeability factor of

    0.25 ounces per square foot per 24 hours or less. Such
    permeability shall constitute the maximum rate of
    transport over time of the hazardous substance proposed
    for storage. Permeability shall be evaluated according
    to accepted engineering practices for materials
    testing. Acceptable methods for determining the
    permeability are provided in Appendix I of this
    subchapter.
  - (2) The membrane liner shall be considered to have

satisfied the requirements of Subsection 2631(c) of
this section only if the liner material meets the
following standards. The material properties specified
in these standards shall be determined using accepted
engineering practices for materials testing.
Acceptable methods for determining these properties are
provided in Appendix I of this subchapter.

- (A) The volume swell after a 24-hour period of

  immersion in the stored hazardous substance shall

  not exceed 3 percent of the original liner

  membrane material thickness.
- (B) The maximum change in elongation of the liner

  membrane material at break after 24 hours of

  immersion in the stored hazardous substance shall

  not exceed 2 percent of the original elongation.
- (C) The liner membrane material Shore A hardness
  (brittleness) after 24 hours of immersion in the
  hazardous substance shall be within 5 percent of
  the original hardness.
- (D) For a containment test, the rate of transport through the liner membrane material of the

hazardous substance after a period of 24 hours
shall not exceed 6 percent by weight of the
hazardous substance being tested. The liquid
height for the test shall be no greater than that
expected in actual site conditions.

- (E) The rate of solubility of the liner membrane

  material in the hazardous substance for a period

  of 24 nours shall not exceed 0.1 percent by weight

  of the section of liner being tested.
- 3) The liner seam strength shall be equal to the tensile strength of the parent material when tested in accordance with accepted engineering practices for materials testing. Acceptable methods for determining the liner seam strength are provided in Appendix I of this subchapter.
- (k) The liner shall be installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.
- (1) The excavation base and walls for the synthetic liner shall

  be prepared to the liner fabricator's specifications and

  shall be firm, smooth, and free of any sharp objects or

protrusions.

- (m) Laminated, coated, or clad materials shall be considered

  single walled and shall not be construed to fulfill the
  requirements of both primary and secondary containment.
- (n) Double-walled underground storage tanks which satisfy the construction standards of Sections 2631(b) and (c) of this article shall be considered to fulfill the volumetric requirements for secondary containment specified in Section 2631(e)(1) of this article.
- (o) The design of double-walled underground storage tanks shall allow for monitoring of the annular space.
- (p) "Sticking" the annular space of a double-walled underground storage tank as a monitoring method shall not be allowed unless a strike plate or other approved devices used to protect the underground storage tank are located directly under the monitoring opening.
- (q) The double-walled underground storage tank shall be so

  designed and installed that any loss of hazardous substance

  from the primary container will drain to a specific location
  within the annular space, as required, to be detected by a

monitoring device or method.

- Any special accessories, fitting, coating, or lining not inherent within the initial design of the primary container or double-walled underground storage tank shall be approved by a nationally recognized, independent testing organization or a demonstration of integrity with the primary container or double-walled underground storage tank shall be required by the local agency.
- (s) All primary containers and double-walled underground storage
  tanks subject to floatation shall be weighted or anchored
  using methods specified by the manufacturer or, if none
  exist, best engineering judgment.

Authority: HASC 25299.3

Reference: H&SC 25281, 25291

Adopt new section to read:

- 2632. Monitoring Standards for New Underground Storage Tanks
- (a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this article.
- (b) The owners or operators of underground storage tanks subject to this section shall implement a monitoring program that is approved by the local agency and required in the permit.

  The program shall utilize one or more of the methods described in Subsection (c) of this section and shall address the items listed in Subsection (d) of this section.
- (c) Monitoring of the space between the primary and secondary container shall utilize either visual monitoring of the primary container as described in Subsection (1) of this subsection or one or more of the methods listed in Subsection (2) of this subsection.
  - (1) A program which relies on the visual monitoring of the primary container shall incorporate all of the following:

- (A) Provisions that all exterior surfaces of the underground storage tank and the surface of the floor directly beneath the underground storage tank shall be monitored by direct viewing.
- (B) Visual inspections shall be performed daily, except on weekends and recognized state and/or federal holidays, and may be more frequent if required by the local agency. The local agency may reduce the frequency of visual monitoring at facilities where personnel are not normally present and inputs to and withdrawals from the underground storage tank are very infrequent. In these instances, the minimum frequency shall be no less then once per week and snall take into account the minimum anticipated time which the secondary container is capable of containing any unauthorized release and the maximum length of time any hazardous substance released from the primary container will remain observable on the surface of the secondary container. The inspection schedule shall be established such that inspections occur on a routine basis when the liquid level in the underground storage tank is at its highest. The inspection frequency shall be

selected such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank.

- (C) The recordation of the liquid level in the underground storage tank at the time of inspection.
- (D) The observation of any liquid on the exterior of or the surface immediately beneath the underground storage tank being visually monitored shall cause the owner or operator to implement all or a portion of the following actions. The applicable actions and their timing shall be based on the site-specific situation, be intended to determine if the observed liquid constitutes an unauthorized release, and shall be included in the permit.
  - (i) Laboratory or field analysis of the

observed liquid.

(1.) Testing of the underground storage tank

utilizing the procedures described in Section 2643

of Article 4 of this subchapter.

(111) Removal of all hazardous substances from the underground storage tank and the secondary container (as specified in Subsection [d] of this section).

substance in the space between the primary and secondary container shall utilize one or more of the methods provided in Table 3.1 of this article. The following requirements shall apply when appropriate.

Table 3.1

Methods of Monitoring for Manardous Substances
in the Secondary Container

Condition			Hethods	of Monitor	ine
of the Secondary System [1]	Type of Substance Stored	Liquid Level Indicator [2	Hasardous Substance ] Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
Dry	Volatile	x		ž.	x
Dry	Monvolatile	X	x		X
Wet	Volatile	X	X	x	I
Wet	Nouvolatile	I	X		1

- [1] A "dry" system does not contain liquid within the secondary container during normal operating conditions while a "wet" system does.
- [2] Includes: continuously operated mechanical or electronic devices;

  manual determinations using mechanical, electronic, or "stick" readings;

  or Visual determinations to detect the presence of any liquid in "dry"

  systems or a change in liquid levels in "wat" systems.
- [3] Includes either qualitative or quantitative determinations of the presence of the hazardous substance.
- [4] Primarily used for double-walled underground storage tanks to detect changes in pressure or vacuum between primary and secondary container.

  The use of pressure or vacuum must be approved as part of the primary and secondary container approval by a nationally recognized, independent testing organization.

- (A) Continuous monitoring devices shall be connected to an audible/visual alarm system.
- (B) Manual monitoring shall be performed daily except on weekends and recognized state and/or federal holidays. Manual monitoring may be required on a more frequent basis as specified by the local agency.
- (C) For methods of monitoring where the presence of the hazardous substance is not determined directly (i.e., liquid level measurements), the monitoring program shall specify the proposed method(s) for determining the presence of the hazardous substance if the indirect methods indicate a possible unauthorized release.
- (d) All monitoring programs shall include the following:
  - when applicable: the frequency of performing the monitoring method, the methods and equipment to be used for performing the monitoring, the location(s) from which the monitoring will be performed, the name(s) or title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment, and

the reporting format.

- (2) A response plan developed by the permit applicant which demonstrates, to the satisfaction of the local agency, that any unauthorized release will be removed from the secondary container within the shortest possible time and no longer than the time consistent with the ability of the secondary container to contain the hazardous substance. The response plan shall include, but is not limited to, the following:
  - (A) A description of the proposed methods and
    equipment to be used for removing the hazardous
    substance, including the location and availability
    of the required equipment, if not permanently onsite, and an equipment maintenance schedule for
    the equipment located on-site.
  - (B) The name(s) or title(s) of the person(s)
    responsible for authorizing the work to be
    performed.

Authority: H&SC 25299.3

Reference: H&SC 25281, 25291

Adopt new section to read:

- 2633. Construction Standards for New Motor Vehicle Fuel
  Underground Storage Tanks
- (a) This section specifies alternate construction standards for new underground storage tanks which only contain motor vehicle fuels. This section may be utilized by permit applicants in lieu of Section 2631 of this action. If this section is used in lieu of Section 2631 of this action, then monitoring standards specified in Section 2634 shall be used in lieu of those specified in Section 2632 of this article.
- (b) Primary containers used for the underground storage of motor vehicle fuel and constructed under this section shall be composed of glass-fibre reinforced plastic, cathodically protected steel, or steel clad with glass fibre reinforced plastic and be installed in conjunction with the leak interception and detection system decribed in Subsections (d) through (f) of this section.
- (c) Primary containers used for the underground storage of motor

  vehicle fuel and constructed of materials other than those

  specified in Subsection 2633(b) of this article shall be

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- subject to the requirements of Sections 2631 and 2632 of this article.
- (d) The permit applicant shall demonstrate to the satisfaction of the local agency that the leak interception and detection system achieves the criteria of Section 2631(c) of this article.
- (e) Methods of construction for the leak interception and detection system for utilizing membrane liners shall be considered to have satisfied the requirements of 2631(c) if, and only if, the liner material meets the following standards:
  - (1) The membrane liner material shall have the permeability factor specified in Subsection 2631(j)(1) of this article as tested against ASTM Reference Fuel B.
  - (2) The membrane liner material shall be suitable for containment of the motor vehicle fuel in that such material shall meet the criteria set forth in Subsections 2631(j)(2)(A) through (E) of this article as tested against the motor vehicle fuel to be stored considering its variability or against ASTM Reference Fuel B.

- (3) The membrane liner shall meet the requirements set forth in Subsection 2631(j)(3) of this article.
- (4) The liner has been installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.
- (5) The excavation base and walls which will come into contact with the synthetic liner shall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects and protrusions.
- (f) The leak interception and detection system and the response plan shall preclude the contact of any leaked hazardous substance with ground water. At a minimum, the leak interception and detection system shall be above the highest anticipated ground water elevation. Proof that the leak interception and detection system and response plan will protect ground water must be demonstrated by the permit applicant to the satisfaction of the local agency. The requirement for this demonstration may be waived by the local agency for underground storage tanks that comply with the requirements of Subsections (e), (f), and (g) of Section

2631 of this article. The demonstration shall, at a minimum, consider the following:

- (1) The containment volume of the leak interception and detection system;
- (2) The maximum leak which could go undetected under the monitoring method required in Section 2634 of this article and the maximum period during which the leak will occur;
- (3) The frequency and accuracy of the proposed method of monitoring the leak interception and detection system;
- (4) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;
- (5) The nature of the unsaturated soils under the leak
  interception and detection system and their ability to
  adsorb contaminants or allow vertical movement of
  contaminants;
- (6) The effect of any precipitation or subsurface
  infiltration on the movement of any leak of hazardous

substance and the available volume of the leak interception and detection system, and

- (7) The nature and timing of the response plan to cleanup the hazardous substances which have been discharged from the primary container.
- underground storage tank that is constructed pursuant to the requirements of this section and monitored pursuant to the requirements of Section 2634 of this article are exempt from the leak interception and detection system requirements of this section, provided that the pressurized piping system is monitored according to the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.

Authority: HASC 25299.3

Reference: : #\$SC 25281, 25291

Adopt new section to read:

- 2634. Monitoring Standards for New Motor Vehicle Fuel
  Underground Storage Tanks
- (a) Underground storage tanks used for the storage of motor

  vehicle fuel and constructed pursuant to the standards of

  Section 2633 of this article shall be monitored according to

  the requirements of the appropriate sections of Chapter 6.7

  of Division 20 of the Health and Safety Code. In addition,

  monitoring of the leak interception and detection system

  shall be pursuant to Subsections (b), (c), and (d) of this
  section.
- (b) The floor of the leak interception and detection system

  shall be constructed on a firm base and sloped to a

  collection sump.
- (c) Access casing(s) shall be installed in the collection sump.

  The access casing shall be:
  - (1) Capable of allowing any liquid that may be moving along
    the upper surface of the leak interception and
    detection system to enter the casing;

- (2) Sized to allow efficient removal of collected liquid .

  and to withstand all anticipated applied stresses using appropriate engineering safety factors;
- (3) Constructed of materials that will not be structurally weakened by the stored hazardous substancs nor donate, capture, nor mask constituents for which analyses will be made;
- (4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;
- (5) Capable of precluding leakage of any hazardous
  substance from the casing to areas outside of the leak
  interception and detection system; and
- (6) Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A secure facility will satisfy the requirements for protection against unauthorized access and vandalism.

- (d) Monitoring of the leak interception and detection system
  shall incorporate all of the following:
  - (1) The use of a continuous monitoring device connected to an audible/visual alarm system or manual monitoring performed daily, except on weekends and recognized state and/or federal holidays. Monitoring may be required more frequently by the local agency based on an assessment of the available volume of the leak interception and detection system and the accuracy of the proposed monitoring method. Approved methods of monitoring the leak interception and detection system include liquid level indicators, hazardous substance sensors, and vapor monitors as specified for volatile hazardous substances in Table 3.1 of this article.
  - (2) A written routine monitoring procedure which includes:
    the frequency of performing the monitoring method, the
    methods and equipment to be used for performing the
    monitoring, the location(s) from which the monitoring
    will be performed, the name(s) or title(s) of the
    person(s) responsible for performing the monitoring
    and/or maintaining the equipment, and the reporting
    format.

- (3) For methods of monitoring where the presence of the hazardous substance is not determined directly (i.e., liquid level measurements), the monitoring program shall specify the proposed method(s) for determining the presence of the hazardous substance if the indirect method indicates the possible presence of the motor vehicle fuel.
- (e) A response plan for an unauthorized release shall be developed prior to installation for any leak interception and detection system which does not meet the volumetric requirements of Subsections 2631(e), (f), and (g) of this article. For those underground storage tanks that meet the volumetric requirement of Subsections 2631(e), (f), and(g) of this article, the local agency shall require the owner to develop a plan pursuant to the requirements of Subsection 2632(d)(2) of this article. The response plan shall consider the following:
  - (1) The volume of the leak interception and detection

    system in relation to the volume of the primary

    container;
  - (2) The amount of time the leak interception and detection

system must provide containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked materials;

- (3) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;
- (4) The nature of the unsaturated soils under the leak

  interception and detection system and their ability to

  absorb contaminants or allow vertical movement of

  contaminants; and
- (5) The methods and scheduling for removing all of the hazardous substances which have been discharged from the primary container and are located in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sump.

Authority: H&SC 25299.3

Reference: H&SC 25281, 25299.1

Adopt new section to read:

#### 2635. General Construction Standards

- (a) The following subsections shall apply to all primary and secondary containers including leak interception and detection systems.
- (b) Primary containers and double-walled underground storage

  tanks shall be designed and constructed to comply with all

  of the following:
  - steel underground storage tanks clad with glass fibrereinforced plastic, and glass fibre plastic underground
    storage tanks shall be fabricated and designed to
    standards developed by a nationally recognized
    independent testing organization or be listed by the
    testing organization. Applicable design standards
    shall include, but are not limited to, those provided
    in Appendix I of this subchapter.
  - (2) Underground storage tanks shall be tested by the manufacturer or an independent testing organization for durability and chemical compatibility with the

hazardous substances to be stored using recognized engineering practices for materials testing.

Acceptable methods for determining durability and chemical compatibility with the hazardous substances are provided in Appendix I of this subchapter.

- (3) Except for steel underground storage tanks, a wear plate (striker plate) shall be centered under all accessible openings of the underground storage tank. The plate shall be constructed of steel or, if the steel is not compatible with the hazardous substance stored, a material resistant to the stored hazardous substance. The width of the plate shall be at least 9 inches wide and have an area of 1 square-foot or be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 0.053 inch (1.35 mm), and those constructed of other materials (as required) shall be of sufficient thickness to provide equivalent protection. The plate shall be rolled to the contours of underground storage tank and bonded or seam welded in place.
- (4) Single-walled primary containers of steel and the outer surface of double-walled underground storage tanks

constructed of steel, with or without coatings, shall be protected by a properly installed, maintained, and monitored cathodic protection system. Selection of the type of protection to be employed shall be based on a certification listing by a nationally recognized, independent testing organization or the judgment of a registered corrosion engineer or a National Association of Corrosion Engineers (NACE) accredited corrosion specialist taking into account the corrosion nistory of the area. Underground storage tanks with listed corrosion resistant materials, non-metalic reinforced plastic coatings, composites, or equivalent systems shall be holiday tested immediately prior to installation.

The protection system shall be inspected under the direction of a registered corrosion engineer or NACE corresion specialist at the frequency specified in the certification or in accordance with the schedule prescribed by the system designer, but no less than semi-annually.

Underground storage tanks in a vault and not backfilled are exempted from the requirements of this subsection.

- (5) All primary containers and double-walled underground storage tanks shall be installed according to the manufacturer's written recommendations or, if no written recommendations exist, best engineering practice.
- (6) All underground storage tanks shall be tested before
  being put into service in accordance with the
  applicable sections of the Code under which they were
  built. The ASME code stamp or Listing Mark of
  Underwriters Laboratories, Incorporated, (UL) or any
  other nationally recognized independent testing
  organization shall be evidence of compliance with this
  requirement.
- underground storage tanks and piping shall be tested for tightness hydrostatically or with air pressure at not less than 3 pounds per square-inch (20.68 k Pa) and not more than 5 pounds per square-inch (34.48 k Pa).

  Pressure piping shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system, or pneumatically tested to 110 percent of the maximum anticipated pressure, but not less than 5 pounds per square inch (34.48 kPa) gauge at

- the highest point of the system. This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least 10 minutes. In lieu of the above, a test using accepted engineering practices shall be used.

  Acceptable test methods for testing pipelines are provided in Appendix I. Double-walled underground storage tanks are exempt from the requirements of this section provided that the annular space is monitored using either pressure or vacuum testing.
- (8) When required by the local agency, all underground
  storage tanks shall be equipped with an overflow
  protection system which includes the following
  elements:
  - (A) A spill catchment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface environment. A level sensing device that continuously monitors and indicates the liquid level in the underground storage tank and either (B) or (C) of this subsection or both;
  - (B) An audible/visual alarm system triggered by a

- liquid level sensor to alert the operator of an impending overfill condition; or
- (C) An automatic shut-off device that stops the flow
  of product being delivered to the underground
  storage tank when the underground storage tank is
  full.
- (9) The overflow protection system required in Subsection

  (b)(8) of this section shall be waived for underground

  storage tanks containing motor vehicle fuels in which a

  spill catchment basin surrounds the fill pipe and

  prevents the inflow of the motor vehicle fuel into the

  subsurface environment and:
  - (A) Both the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank;
  - (B) The available capacity of the underground storage
    tank to be filled is determined immediately prior
    to filling to be at least 103 percent of the
    volume of the entire tank compartment to be
    delivered or the volume of the entire tank

- compartment to be delivered plus 200 gallons, whichever is less, as determined by underground storage tank guaging; or
- metered into the underground storage tank and the
  available underground storage tank capacity is
  determined immediately prior to filling.
- (c) Secondary containers including leak interception and detection systems installed pursuant to Section 2633 of this article shall comply with all of the following:
  - (1) The secondary container shall, at a minimum, encompass the area within the system of vertical planes

    surrounding the exterior of the primary containment unit. If backfill is placed between the primary and secondary containment, then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment over the vertical distance between the primary and secondary containment. The secondary containment shall extend an additional distance beyond the vertical planes described above equal to the radius of lateral spread plus 1 foot.

- (2) The secondary container must be capable of precluding
  the inflow of the highest ground water anticipated
  during the life of the underground storage tank into
  the space between the primary and secondary containers.
- (3) If the space between the primary and secondary

  containers is backfilled, the backfill material shall

  not preclude the vertical movement of leakage from any
  part of the primary container.
- (4) The secondary container and any backfill material
  between the primary and secondry containers shall be
  designed and constructed to promote gravity drainage of
  a leak of hazardous substances from any part of the
  primary container to the monitoring locations(s).
- (5) Two or more primary containers shall not utilize the

  same secondary container if the primary containers

  store materials that in combination may cause a fire or

  explosion; or the production of a flammable, toxic, or

  poisonous gas; or the deterioration of a primary or

  secondary container.
- (6) Drainage of liquid from within a secondary container
  shall be controlled in a manner approved by the local .

- agency so as to prevent hazardous materials from being discharged. The liquid shall by analyzed to determine the presence of any of the hazardous substance(s) stored in the primary container prior to initial removal and monthly thereafter for any continuous discharge (removal) to determine the approriate method for final disposal. The liquid shall be sampled and analyzed immediately upon an indication of an unauthorized release from the primary container.
- for primary containers installed completely beneath the ground surface, the original excavation for the secondary container shall have a water-tight cover which extends at least 1 foot beyond each boundary of the original excavation. This cover shall be asphalt, reinforced concrete, or equivalent material which is sloped to drainways leading away from the excavation.

  Access openings shall be constructed as water-tight as practical. Double-walled underground storage tanks and open vaults are exempt from the requirements of this subsection.
- (8) The actual location and orientation of the underground
  storage tanks and appurtenant piping systems shall be
  indicated on as-built drawings of the facility. Copies

of all drawings, photographs, and plans shall be submitted to the local agency.

Authority: H&SC 25299.3

Reference: H&SC 25281, 25299.1

Article 4. Existing Underground Storage Tank Monitoring Standards

Adopt new section to read:

2640. App: leability

(a) All owners of existing underground storage tanks subject to this subchapter shall implement a visual monitoring or alter-ative monitoring system that complies with this article and is approved by the local agency by the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code. A local agency shall not issue a permit unless the monitoring system is capable of: determining the containment ability of the underground storage tank and detecting any active or future unauthorized releases. If the monitoring technique(s) selected is designed to detect the cresence of the stored hazardous substance outside of the underground storage tank, then tests must be made to determine if the hazardous substance or any interfering constituents exist in the soil or backfill surrounding the underground storage tank. The failure to implement an approved monitoring system shall be cause for the local agency to require closure of the underground storage tank pursuant to Article 7 of this subchapter.

- (b) The objectives of the monitoring program for existing underground storage tanks are: to detect unauthorized releases before ground water is affected. Ground water monitoring may be utilized as a primary means of monitoring when the ground water does not have actual or potential beneficial uses.
- (c) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2642 of this article for all visible portions of the underground storage tank, whenever feasible. If the entire underground storage tank is not susceptible to visual monitoring but a significant portion of the underground storage tank can be visually monitored, that portion of the underground storage tank shall be monitored visually. Visual monitoring that can only be implemented during a portion of the year shall be utilized during those portions of the year. If visual monitoring cannot be implemented for the entire underground storage tank throughout the entire year, then one of the monitoring alternatives specified in Section 2641 of this article shall also be implemented. The monitoring alternative shall be operative during those times when visual monitoring is not feasible or for those portions of the underground storage

tank which are not susceptible to visual monitoring.

- (d) All owners of existing underground storage tanks subject to
  this subchapter who are not able to implement visual
  monitoring as specified in Section 2642 of this article
  shall implement one of the monitoring alternatives specified
  in Section 2641 of this article.
- (e) The monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 of this article are minimums. Local agencies, as a condition of approval of a specific monitoring alternative, shall require additional or more frequent monitoring if necessary to comply with the objectives specified in Subsection (b) of this section and Subsection (d) of Section 2641 of this article.
- (f) Local agencies shall reduce the monitoring frequency for visual monitoring or a monitoring alternative listed in Section 2642 of this article in situations where environmental conditions make it impracticable, physically impossible, or life threatening to complete the required monitoring.

Authority: H&SC 25299.3

Reference: H&SC 25283, 25291, 25292

Adopt new section to read:

#### 2641. Monitoring Alternatives

- (a) All owners of evisting underground storage tanks subject to this subchapter who cannot implement visual monitoring for the entire underground storage tank during all periods of the year shall implement, by the statutory deadline, one of the monitoring alternatives specified in Subsection (c) of this section.
- (b) The local agency shall base its review of the proposed monitoring alternative on the specification contained in Subsection (d) of this section and shall approve the monitoring alternative if it finds that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in Subsection (b) of Section 2640 of this article. If the proposed monitoring alternative cannot be approved, then the local agency may request the submittal of another proposed monitoring alternative or may specify the implementation of another monitoring alternative.
- (c) The optional monitoring alternatives are as follows:

- (1) Underground Storage Tank Testing: This monitoring
  alternative shall, at a minimum, utilize the procedures
  specified in Section 2643 of this article and shall be
  performed monthly at a minimum.
- (2) Vapor or Other Vadose Zone Monitoring and Ground Water

  Monitoring with Soil Sampling:
  - (A) This monitoring alternative shall, at a minimum, include vadose zone monitoring, ground water monitoring, and soil sampling. Soil sampling is required only at the time the boring(s) and well(s) are installed.
  - (B) The vadose zone monitoring program shall be designed and installed pursuant to the procedures specified in Sections 2646 and 2648 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. Other vadose zone monitoring shall be performed weekly, at a minimum.
  - (C) Ground water monitoring wells shall be designed
    and installed according to the procedures
    specified in Sections 2647 and 2648 of this

- article and monitored semi-annually, at a minimum. The minimum number of wells shall be as specified on Table 4.1 of this section for Alternative 2.

  Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. The local agency snall require laboratory verification at periodic intervals if visual or field analysis cannot achieve levels of detection equivalent to laboratory analysis.
- (D) The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all boring(s) and well(s) installed.
- (3) Vacose Zone Monitoring, Soil Sampling, and Underground
  Storage Tank Testing:
  - (A) This monitoring alternative shall, at a minimum, include vadose zone monitoring and analysis of soil samples taken from the boring(s) made for vadose zone monitoring and tank testing. This alternative shall not be approved if first ground

# TABLE 4.1 MONITORING ALTERNATIVES:

MINIMIN

		MINIMUM		•	
		mon I toring	REFER ENCE		
LTERNATIVE	. NETHOD	FR EQUINICY	BECTION	COMPRESE AND CONDITIONS PROBLETTING USE OF ALTERNATIVE	
•					
1 .	Tank Testing	Monthly	Section 2643	Mone	
2	Vapor			1. Must be able to do both vadose and ground water	
	OT			monitoring.	
	Other Vadose			2. Ground water should normally be less than 100 feet	
1	Zone Monitoring			deep to use this alternative.	
·	Hethod	Daily/Continuous	Section 2646	3. Minimum number of ground water monitoring wells:	
	4nd			a. Ground water equal to or less than 50 feet deep.	
	Ground Water	Semi-annuș l	Section 2647	o Single or multiple tanks (sli <1.000 gal, same or	
	and			closely spaced excavations) - one downgradient	
	5011=	One-Time	Section 2645	well per tank minimum up to three wells.	
				o Single tank (≥1,000 gal) - two wells minimum	
				one of which shall be downgradient.	
				o Two or three tanks (at least one ≥1,000 gal, same	
				or closely spaced excavations) - three wells.	
				minimum at least one of which shall be downgradient.	
				o Four or more tanks (at least one 21,000 gal, same	
				or closely spaced excevations) - four wells	
				minimum, at least two of which shall be down-	
				gradient and the remainder equally spaced.	
				Pipelines - additional wells, if needed, as	
				datermined by the local agency.	
				b. Ground water greater than 50 feet deep.	
				o Single tank -one downgradient well.	
				o Multiple tanks or closely spaced tank	
				excavations - three wells uniformly spaced.	
	•			unless the ground water gradient can be	
				accurately determined, in which case, one	
				downgradient well.	
				o Fipelines - additional wells, if needed,	
			•	by the local agency.	
3	Va do se	Daily/Weekly	Section 2646	This alternative shall not be used when first ground	
	end			water is less than 100 feet deep and:	
	Soils	One-Time	Section 2645	1. First ground water has actual or potential beneficial	
	and			uses (municipal, domestic, industrial, or agricultural	
	Tank Testing	Annus 1	Section 2643	supply); or	

uses.

2. First ground water is hydraulically connected to

ground water which had or potentially has beneficial

•	Ground Water	Honthly	Section 264/	1. Use of this alternative shall be limited to the following situations:
	Soils	One-Time	Section 2645	<ol> <li>Ferennial ground water is normally less than</li> <li>30 feet deep, and</li> </ol>
				b. The ground water being monitored does not have
				any actual or potential beneficial uses
				(municipal, domestic, agricultural, or industrial
				supply), and
				c. The ground water being monitored is not hydraulically
	;			connected to ground water which has any actual or
				potential beneficial uses (municipal, domestic,
				agricultural, industrial supply), and
				d. The monitoring well can be acreemed in the
				area 10 feet above the highest perennial ground
				water level and 20 feet below the lowest ground
				water level.
				2. Minimum number of ground water monitoring wells See Section 3s. of Alternative No. 2.
		<del></del>	·····	
5	Inventory	Daily	Section 2644	1. Must use approved meters for tank inputs and
	Reconciliation			and withdrawals.
	and			2. Inventory reconciliation which exceeds an
	Tank Testing	Annua 1	Section 2643	allowable measurement error plus 0.15 percent of
	and			throughput at any time during a 30-day period
	Pipeline Leak			shall require further investigation:
	Detectors	Continuous		Tank Size Allowable Heasurement Error
				≤4000 25 gallons
				4000 to ≤ 8000 50 gallons
				8000 to ≤12000 75 gallons
				≥12000 100 gallons
<del></del>				3. Limited to motor vehicle fuels storage tanks.
6	Inventory	Daily	Section 2644	1. Must use approved meters for tank inputs and
	Reconciliation			withdrawals.
	and			2. Inventory reconciliation which exceeds any of the
	Tank Testing	Annus 1	Bection 2643	following shall require further investigation:
	and			a. Daily variation - ≥100 gallons
	Pipeline Leak			b. Weekly variation - 25 percent of throughput
	Detectors	Continuous		but no greater than 350 gallons
	and			c. Monthly variation ~ ≥0.5 percent of throughput
	Soils			no less than 100 gallons
	and Vadose Monitoring	Variable	Section 2646	3. Minimum number of ground water wellsSee
	or			Alternative No. 2.
	Ground Water			
	Monitoring	Varisble	Section 2647	4. Limited to motor vehicle fuels storage tanks.

	Tenk			1. This alternative is limited to use on small tanks
	Gauging	Weekly	Section 2644	that do not have frequent input or withdrawals
	end			(e.g., standby generator fuel supply) and where the
	Tank Testing	Annua 11y	Section 2643	liquid level in the tank can be measured to the
				accuracy of + or -5 gallons. A liquid level difference
				of 1 percent of the tank volume or 5 gallons,
				whichever is less shall be cause for further
				investigation.
	Tank Testing	Annually	Section 2643	1. This is an interim monitoring alternative that
	and			can be implemented for up to three years.
÷	Inventory			2. Inventory reconciliation shall utilize approved
· ·.	Reconciliation	Daily	Section 2644	meters for imputs and withdrawals and shall
	or	•	•	maintain variations within the limits specified
	Tank Guaging	Daily or	Section 2644	in Alternative No. 6.
	•	Weekly		3. Tank gauging to limited to use on tanks described
				in Alternative No. 7 and to those tanks that can
	•			eliminate inputs and withdrawals three times per
				week for 12 hours each. A liquid level difference
				of 1 percent of the tank volume but not greater
				than 50 gallons shall be cause for further
				investigation.

<sup>\*</sup> This table is provided as a summary of the various monitoring alternatives.

Section 2641 shall be used to determine the actual requirements for each monitoring alternative.

water, including intermittent, perched ground water, is less than 100 feet deep and this ground water has actual or potential beneficial uses (domestic, municipal, agricultural, or industrial supply) or is hydraulically connected to ground and surface waters which has actual or potential beneficial uses.

- (B) The determination that first ground water is significantly deeper than 100 feet shall be by an on-site boring(s) constructed according to the specifications in Subsection (p) of Section 2648 of this article or by evidence based on an evaluation pursuant to Subsection 2648(p) of this article.
- 103 Vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Sections 2646 and 2648 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. Other vadose zone monitoring shall be performed weekly, at a minimum.
- (D) The soil sampling and analysis shall be performed

- as specified in Section 2645 and 2648 of this article. Samples shall be taken from all borings installed.
- (E) Underground storage tank testing shall be

  performed yearly at a minimum according to the

  procedures specified in Section 2643 of this
  article.
- (4) Ground Water and Soil Testing:
  - (A) This monitoring alternative shall, at a minimum, utilize ground water sampling and analysis of soil samples taken at the time of well installation.

    This alternative shall not be approved if any of the following conditions exist:
    - (1) First ground water, including intermittent, perched ground water, is normally greater than 30 feet deep;
    - (11) The ground water proposed for monitoring
      has actual or potential beneficial uses (domestic,
      municipal, industrial, or agricultural supply) or
      is hydraulically connected to ground or surface

water which has actual or potential beneficial
uses, or

(111) The ground water monitoring well cannot be perforated within the interval from 10 feet above the highest anticipated ground water level to 20 feet below the lowest perennial ground water level. The 10-foot requirement may be waived by the local agency if ground water is less than 10 feet deep. If the local agency waives this requirement, the well must still be capable of being perforated above the highest anticipated ground water level.

(B) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and shall be monitored monthly, at a minimum. The minimum number of monitoring wells shall be as specified in Table 4.1 of this article for Alternative 4. Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. If visual observation or field

analysis is used, the local agency enal, require periodic laboratory analysis if the visual observation or field analysis does not provide a degree of detection equal to that of laboratory analysis

- (C) The soils sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all wells installed.
- (5) Inventory Reconciliation, Underground Storage Tank
  Testing, and Pipeline Leak Detectors
  - (A) This monitoring alternative shall, at a minimum, utilize inventory reconciliation, underground storage tank testing, and pipeline leak detectors.

    The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels.
  - (B) Inventory reconciliation shall be performed

    according to the procedures specified in Section

    2644 of this article. The owner or operator of an

    inderground storage tank that experiences a

variation(s) shall implement the evaluation

procedures specified in Subsection (f) of Section

2644 of this article within the times specified.

- (i) The daily variation in inventory reconciliation shall be the difference between the calculated volume in storage and the actual volume in storage.
- (11) If the variation is based on the previous day's physically measured inventory, the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection.
- (111) If the variation is based on the previous day's calculated inventory, then the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection.

  The calculated inventory on any given day shall be based on continuous calculations from the day on which the physical inventory was used. The period

of continuous calculations shall be no greater than 1 month.

of the measurement error from Table 4.2 of this article and the throughput error calculated in accordance with Subsection (v) of this subsection.

Table 4.2

Tank Size*	Allowable
	Messurement
	Error*
less than 4,000	<u>25</u>
4,000 to less than 8,000	<u>50</u>
8,000 to less than 12,000	<u>75</u>
12,000 or greater	100

# all values in gallons

(0.0015) of the measured throughput during the

period under consideration as described in either

- Subsection (11) or Subsection (111) of this subsection.
- (C) Underground storage tank testing shall be performed yearly, at a minimum, according to the procedures specified in Section 2643 of this article.
- (D) All pressurized pipelines shall be monitored using an automatic on-line pressure loss detector and flow restriction device. The detector shall be connected to an audible/visual alarm system unless it provides for at least a 50-percent reduction from the normal flow rates. Suction pipelines shall be monitored daily for indications of possible leaks.
- (6) Inventory Reconciliation, Underground Storage Tank

  Testing, Pipeline Leak Detectors, Vadose Zone, or

  Ground Water Monitoring and Soil Testing:
  - (A) This monitoring alternative shall, at a minimum,
    utilize inventory reconciliation, underground
    storage tank testing, and pipeline leak detectors.
    In addition, either vadose zone or ground water

- monitoring shill be included and analysis of soil
  samples taken at the time of boring or well
  installation. The use of this alternative is
  limited to those unserground storage tanks which
  contain motor vehicle fuels.
- (B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article. The owner or operator of an underground storage tank that experiences a variation in excess of any of the following shall implement the evaluation procedures specified in Subsection (f) of Section 2644 of this article within the times specified.
  - (i) daily variation: + 100 gallons
  - (11) 7-day variation: + 5 percent of throughput
    or 100 gallons whichever is greater but, in no
    case, greater than 350 gallons
  - (111) more than 30-day variation: + 0.5 percent
    of throughput or 100 gallons whichever is greater
- (C) Underground storege tank testing shall be

4, 15

- procedures specified in Section 2643 of this article.
- (D) All pressurized pipelines and suction pipelines
  shall be monitored as provided for in Subsection
  (5)(d) of this subsection.
- (E) Vadose zone monitoring, if used, shall be designed and installed according to the procedures specified in Sections 2646 and 2648 of this article. The frequency of monitoring shall be no less frequent than semi-annually.
- designed and installed according to the procedures specified in Sections 2647 and 2648 of this article. The minimum number of monitoring wells shall be as specified in Alternative 6 in Table 4.1 of this article. Analysis of samples collected can be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. Ground water samples shall be collected and analyzed at least semi-annually. If

- samples are analyzed by visual observation or field analysis, the local agency shall require laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods.
- (G) The soil sampling and analysis shall be performed

  as specified in Sections 2645 and 2648 of this

  article. Samples shall be taken from all borings

  and wells installed.
- (7) Underground Storage Tank Gauging and Testing:
  - (A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of ± 5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation.

- (B) The underground storage tank gauging shall be performed according to the following specifications:
  - (1) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or Mithdrawals;
  - (11) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods, each lasting up to 5 days. No input or withdrawals shall occur during these periods. The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;
  - (111) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article; and
  - (iv) If the liquid level varies by more than 1
    percent of the underground storage tank's volume
    or 5 gallons, whichever is less, between
    measurements, an authorized release shall be

assumed to have occurred. The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

### (8) Interim Monitoring

- (4) This alternative monitoring method shall, at a minimum, utilize underground storage tank testing and either inventory reconciliation or tank gauging. This alternative shall be available only to any of the following catagories of owners for a period of up to 3 years after the effective date of these regulations.
  - (1) Small businesses as defined in Subsection

    11342(e) of the Government Code and non-profit

    organizations which would meet the criteria for a

    small business, provided the owner demonstrates to

    the local agency that sufficient funds will be

    available to close the underground storage tank

    pursuant to Article 7 of this subchapter or to

    implement one of the first 1 monitoring

    alternatives of this subsection within the 3-year

    period;

(11) Any underground storage tank owner who provides a written, legally binding, commitment to the local agency that the underground storage tank will be closed according to the procedures specified in Article 7 of this subchapter within 3 years from the statutory compliance date or replaced with a new underground storage tank which complies with the provisions of Article 3 of this subchapter. The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit; or

(111) Any governmental agency that demonstrates to the local agency that, due to budgetary constraints the governmental agency needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection. The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit.

(B) Underground storage tank testing shall be

- performed according to the procedures specified in Section 2643 of this article and shall be performed yearly, at a minimum.
- according to the procedures specified in Section

  2644 of this article. The owner or operator of an

  underground storage tank that experiences a

  variation in excess of the levels specified in

  Subsection (c)(6)(B) of this section shall

  implement the evaluation procedures specified in

  Subsection (f) of Section 2634 of this article

  within the time specified.
- (D) Underground storage tank gauging shall be performed according to the specifications of Subsection (c)(7)(B) of this section. Variations in excess of 1 percent of the underground storage tank volume or 50 gallons, whichever is less, shall be cause for further evaluation.
- (d) The local agencies shall evaluate each monitoring

  alternative proposed to determine if it achieves the

  objectives specified in Subsection (b) of Section 2640 of
  this article according to the following:

Reference: H&SC 25292

- (1) Whenever possible, a primary method of monitoring other
  than ground water monitoring shall be performed,
  monthly at a minimum.
- where the underground storage tank is in an area where precipitation or surface runoff provides direct recharge of the ground water and the ground water being recharged has an actual or potential use (domestic, municipal, agricultural, or industrial supply), a monitoring method other than ground water monitoring shall be utilized on a monthly or more frequent basis for leak detection monitoring.
- (3) In addition, ground water monitoring may be required by the local agency in the areas described in Subsection

  (2) above. The local agency shall review and approve the number and location of the monitoring well(s).

  More than 1 underground storage tank or facility may be monitored using the same well provided the well is directly downgradient of all underground storage tanks or facilities being monitored and is within 1,000 feet of all underground storage tanks being monitored.

Authority: H&SC 25299.3

Adopt new section to read:

### 2642. Visual Monitoring

- (a) Visual monitoring shall be utilized as the principal leak detection monitoring method, where feasible, for all visible exterior surfaces of an underground storage tank unless the owner demonstrates to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable. If visual monitoring is required, the provisions of Subsections (c) and (d) of this section shall be followed.
- (b) The owner is exempt from visual monitoring for that portion of the underground storage tank to which the following conditions apply.
  - (1) Any portion of an underground storage tank that is in contact with the ground, a floor, or pad such that it cannot be seen. An underground storage tank in a saddle should not typically qualify for an exemption.
  - (2) Visual inspection of the underground storage tank would put a person in a physically unsafe environment.

- (3) Visual inspection of the underground storage tank would require the use of extraordinary personal protection equipment (other than-normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.).
- (4) The underground storage tank is located at a facility which is not staffed on a daily basis.
- (c) A visual monitoring program shall incorporate all of the following:
  - (1) Provisions for routine direct visual inspection of all accessible exterior surfaces of an underground storage tank and the horizontal surface directly beneath the underground storage tank shall be monitored by direct viewing.
  - (2) A written routine monitoring procedure shall be prepared and be available at the facility which includes: the frequency of visual inspections, the location(s) from which observerations will be made, the name(s) or title(s) of the person(s) responsible for performing the observations and the reporting format.

- (j) Visual inspections shall be performed daily, at a minimum, and shall be more frequent if necessary. The inspection schedule shall be established such that some of the inspections occur when the liquid in the underground storage tank is at its highest level. The inspection frequency shall be determined such that any unauthorized release will remain observable on the exterior of or the horizontal surface immediately beneath the underground storage tank between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thereof being visually monitored.
- (4) Recordation of the observations made and the liquid

  level in the underground storage tank at the time of
  the inspection.
- (d) The observation of any liquid on the exterior of or the horizontal surface immediately beneath the underground storage tank being visually monitored shall cause the owner or operator to implement all or a portion of the following actions. The applicable actions and their timing shall be

based on the site-specific situation, shall be interned to determine if the observed liquid constitutes an inauthorized release, and shall be included in the permit.

- (1) Landratory or field analysis of the observed liquid which shall include minimum levels of detection.
- (2) Testing of the underground storage tank utilizing the procedures described in Section 2643 of this article.
- (3) Removing all hazardous substances from the underground storage tank.
- (e) Visual monitoring of the exposed portion of a partially concealed underground storage tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank using a monitoring alternative specified in Section 2641 this article.

Authority: #4SC 25299.3

Reference: H&SC 25292, 25293

Adopt new section to read

# 2643. Underground Storage Tank Testing

- (a) All owners of existing underground storage tanks

  implementing a monitoring alternative in Section 2641 of

  this article which specifies underground storage tank

  testing shall implement a testing program pursuant to

  Subsections (b) through (g) of this section.
- (b) Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance at a rate of 0.05 gallons per hour or less. These methods are limited to those tests that make adjustments for all of the following, if applicable:
  - (1) The presence of vapor pockets;
  - (2) Thermal expansion or contraction of the hazardous substance, which include any density considerations;
  - (3) Temperature stratification in the underground storage tank;
  - (4) Evaporation;

- (5) Pressure variations in the underground storage tank; and
- (6) Deflection of the underground storage tank ends.
- (c) Testing of pipelines which have been isolated may utilize a hydrostatic pressure test in lieu of the test required in Subsection (b) of this section. This hydrostatic pressure test shall be conducted at a pressure of 50 psi (2600 mm Hg) or greater. The test shall be performed for at least 5 minutes. A pressure drop of more than 5 psi (260 mm Hg) per minute indicates the probability of a leaking pipeline. A pressure drop of less than 5 psi (260 mm Hg) but greater than zero is inconclusive, and a test pursuant to Subsection (b) of this section shall be performed.
- (d) The tests required in this section shall be performed by personnel who have received training in appropriate test procedures. The person performing the test described in Subsection (b) of this section shall certify that the test procedure utilized takes into account the variables specified and is capable of measuring leaks of 0.05 gallons per hour or less. Additionally, within 1 year after the development of a listing or certification procedure which

- evaluates the accuracy of the test for the type of test

  described in Subsection (b) of this section, only listed or
  certified tests shall be accepted.
- (e) Within 30 days of completion of either of the leak detection
  test described in Subsection (b) or (c) of this section, the
  underground storage tank owner shall provide the local
  agency with a report which includes the following
  information, if applicable:
  - (1) The procedures used (including any deviations from
    those recommended by the developer of the underground
    storage tank test procedure) for the leak detection
    method;
  - (2) The test results used in determining the volumetric rate of product loss;
  - (3) The volumetric rate of product loss; and
  - (4) The information shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the test procedure used.
- (f) Underground storage tanks which are found to lose product

- shall be repaired or replaced as specified in Articles 5 and 7 of this subchapter, respectively.
- (g) The results of any tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank is leaking shall be reported by the underground storage tank owner to the local agency within 30 days of completion of the test.

Authority: - #SC 25299.3

Reference: H&SC 25291, 25292, 25293

Adopt new section to read:

### 2644. Inventory Reconciliation

- (a) All owners of existing underground storage tanks
  implementing a monitoring alternative in Section 2641 of
  this article which specifies inventory reconciliation shall
  implement an inventory reconciliation program as described
  in Subsections (b) through (f) of this section. This
  requirement may be transferred to the operator pursuant to
  the appropriate provisions of Chapter 6.7 of Division 20 of
  the Health and Safety Code.
- monitored utilizing a daily inventory reconciliation system that takes into account: separate daily underground storage tank quantity measurements for both the stored hazardous substance and any water layer, and daily meter readings for underground storage tank input and withdrawals. Underground storage tanks that are connected by a manifold may be monitored as a unit instead of individually. Underground storage tank input and withdrawal meters shall comply with California Administrative Code. Title 4. Chapter 9. "Tolerances and specifications for commercial weighing and measuring devices". Meters shall be inspected

- by the county department of weights and measures or a device repairman as defined in the California Business and Professions Code, Division 5, Chapter 5.5
- (c) For the purpose of this section, "daily" shall be defined as at least 5 days per week. This minimum may be reduced during weeks that a public holiday occurs on Monday through Friday. Local agencies may reduce the frequency of monitoring to no less than once every 3 days at facilities that are not staffed on a regular basis provided that the monitoring is performed on every day the facility is staffed or that inputs or withdrawals are made from the underground storage tank.
- (d) Underground storage tank quantity measurements shall be based on liquid elevation measurements which are:
  - (1) Performed during periods when no additions or
    withdrawals are being made to the underground storage
    tank;
  - (2) Performed by the underground storage tank owner,

    operator, or other designated personnel who have had

    appropriate training;

- (3) Based on the average of two readings if stick or tape measurements are used,
- (4) Capable of detecting a water layer at the bottom of the underground storage tank, if possible. If the underground storage tank is not level, then the measurement should occur at the lowest end of the underground storage tank;
- (5) Measured at the center of the longitudinal axis of the underground storage tank if access is available or measured at the lowest end of the underground storage tank with a calibration measurement at both ends, if possible, to determine if any underground storage tank tilt exists and, if so, its magnitude; and
- (6) Converted to volume measurements based on a calibration chart for the underground storage tank. This chart shall, if possible, take into account the actual tilt of the underground storage tank as determined initially as described in Subsection (5) above.
- (e) The owner or operator shall, on a quarterly basis, submit a statement to the local agency, under penalty of perjury, that either: the data is within allowable variations or a

- listing of the dates and variations that exceed the allowable variations.
- (f) If inventory reconciliation indicates a loss of the nazardous substance greater than that specified, the operator or permittee shall implement the following. If inventory reconciliation indicates a gain of hazardous substances greater than that specified, the operator or permittee shall implement Subsections (1), (2), (3), and (5) of this section. The steps may be implemented sequentially or concurrently; however, they must be completed within the specified time periods. Reporting as required in Article 5 of this subchapter shall be followed.

If completion of the steps described in Subsections (2),
(3), or (5) of this subsection indicates inventory
reconciliation error that, when corrected cause the levels
specified, not to be exceeded, then the remainder of the
steps reed not be completed. If completion of the steps
described in Subsections (4) or (6) through (8) of this
subsection reveal the source of the loss, then the remainder
of the steps need not be completed.

The transfer of hazardous substances into and out of the underground storage tank may continue during implementation

of the steps provided that the steps are completed within.

the specified periods and any loss or gain did not exceed

two times the specified levels. Daily reconciliation shall
continue during implementation of the steps.

- (1) The operator shall notify the owner verbally or in writing of the fact that inventory reconciliation indicates a loss of hazardous substances or gain of water within 24 hours of the completion of the daily reconciliation which indicates the loss or gain.
- (2) The operator shall review the inventory records within 2 hours to determine if an error exists which would cause the gain or loss to be less than that specified.
- (3) The operator shall have performed, by a qualified person, a complete review of all inventory records from the last time a zero loss or gain condition existed.

  This shall include a new inventory reconciliation which was taken at least 8 hours after the inventory reconcilition which triggered this evaluation. This shall be completed within 24 hours of the conclusion of Subsection (f)(2) of this section.
- (4) The readily accessible physical facilities shall be

- carefully inspected for leakage. This shall be completed by trained personnel within 24 hours of completion of Subsection (f)(3) of this section.
- (5) All dispenser meters associated with hazardous

  substance withdrawal shall be checked for calibration

  within 24 hours of completion of Subsection (f)(4) of
  this section.
- (6) All piping shall be tested within 24 hours of completion of Subsection (f)(5) of this section. The piping shall be isolated and hydrostatically pressure tested at 50 psi (2600 hmm Hg) or greater. If the pressure drops more than 5 psi (260 mm Hg) per minute, it indicates the probability of a leak in the line. Repeat the test at least once to ensure against compression of entrained air. Any pressure drop less than 5 psi (260 mm Hg) per minute is inconclusive as it may be caused by cooling. This step may be completed after the step described in Subsection(f)(7) of this section if excavation is necessary to perform the tests and if the step described in Subsection (f)(7) of this section is completed within 48 hours of the completion of Subsection (f)(5) of this section. If this occurs, then this subsection shall be completed within 24 hours

of the completion of Subsection (f)(7) of this section.

- (7) The underground storage tank shall be tested using the tests described in Section 2643 of this article within 48 hours of completion of Subsection (f)(6) of this section.
- (8) Additional tests or investigations as required by the local agency.

Authority: H&SC 25299.3

Reference: H&SC 25291, 25292

Adopt new section to read:

## 2645. Soil Testing

- (a) All owners of existing underground storage tanks

  implementing one of the monitoring alternatives described in

  Section 2641 of this article which requires borings for

  vadose zone or ground water monitoring shall implement soil

  testing pursuant to Subsections (b) through (n) of this

  section.
- (b) Undisturbed (intact) soil samples shall be recovered from

  all borings used for the installation. This requirement may

  be waived by the local agency when borings cannot be drilled

  and sampled using accepted techniques that do not introduce

  liquis into the boring.
- (c) Soil samples shall be taken at intervals of 5 feet or less

  beginning at the ground surface, but sampling shall not be

  required below the water table nor in unweathered bedrock

  which has little or no primary permeability.
- (d) A soil sample shall also be obtained at the termination depth of a dry boring regardless of the spacing interval.

- (e) Borings shall be drilled and sampled by techniques that do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using accepted techniques, the requirement for soil sampling may be waived by the local agency; however, the vadose zone or ground water monitoring system shall still be installed.

  Furthermore, once below the water table, it is not required that the wells be advanced using the same method that was used in the vadose zone.
- (f) Borings shall be described in accordance with the provisions of Subsections 2648(t) and (u) of this article.
- (g) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide replicate analyses, if specified.
- (h) If more than one boring is utilized, composite samples

  consisting of material from the same depth from each boring

  may be used for laboratory analysis if such samples can be

  made without loss of constituents prior to analysis.
- (1) Samples shall be prepared, stored, and transported by appropriate EPA methods or other similar or superior methods

approved by the local agency.

- that provide quantitative or qualitative results. If

  qualitative methods are used, then their lower detection

  limits shall be verified by the test manufaturer or actual

  field tests for sensory-type tests. EPA-approved methods or

  other methods of similar or superior precision and accuracy

  that are approved by the local agency shall be used. The

  local agency shall approve the analysis method if it

  provides a lower level of detection that is below that which

  would interfere with future monitoring methods.
- (k) Samples shall be analyzed for one or more of the most

  persistent constituents that have been stored in the

  underground storage tank. If the use of the underground

  storage tank has historically changed, then analysis shall

  be for at least one constituent from each period of use. If

  the hazardous substance is known to degrade or transform to

  other constituents in the soil environment, the analysis

  shall include these degradation and/or transformation

  constituents.
- (1) Samples may be analyzed in any order of depth. If levels of hazardous substances known or suspected to have been

contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soils analysis is not necessary pursuant to this subsection and the hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite the presence of the hazardous substance already in the environment.

- (m) If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or close the underground storage tank pursuant to Article 6 or 7 of this subchapter.
- (n) If evidence of an unauthorized release is not detected, an alternative leak detection monitoring system shall be

installed pursuant to Section 2641 of this article.

Authority: %180 25299.3

Reference: -\$SC 25292

4.43

Adopt new section to read: .

### 2646. Vadose Zone Monitoring

- (a) All owners of existing underground storage tanks
  implementing one of the monitoring alternatives described in
  Section 2641 of this article which requires vapor or another
  form of vadose zone monitoring shall implement the vadose
  zone detection monitoring system pursuant to Subsections (b)
  through (h) of this section.
- (b) Vadose zone monitoring shall consist of vapor monitoring,

  soil-pore liquid monitoring, or other forms of vadose zone

  monitoring. Combinations of these methods may be used.
- (c) Wells for vapor monitoring shall be fully perforated except
  for that portion adjacent to a surface seal and that portion
  of the bottom of a well where a plugged, blank segment of
  casing is used as a free liquid trap.
- (d) The number, location, and depths of vadose zone monitoring

  Points shall be selected so as to give the earliest possible

  warning of any unauthorized release from the underground .

  Storage tank.

- (e) Subsurface vadose zone monitoring systems shall, if

  possible, be located within the backfill surrounding the

  underground storage tank.
- (f) Vapor monitoring for underground storage tanks shall be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible to detection:
  - specific site, it shall be demonstrated by an actual on-site demonstration, using an appropriate tracer substance, that vapor would actually be detected by the installed system. This requirement may be waived by the local agency based on a demonstration by the applicant that the proposed monitoring system has been proven to be effective in detecting unauthorized releases from underground storage tanks in equal or less favorable situations. The following factors shall be considered in comparing the demonstration to the actual on-site conditions:
    - (A) Backfill materials and grain size distribution.
    - (B) Type and homogenity of native soils.

- (C) Range of moisture contents of the backfill and native soils that will be encountered and their effect on vapor migration and detection.
- (2) The location and depth at which each sensor is placed relative to the underground storage tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil.
- (3) Vapor monitoring wells placed in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well.
- (g) Soil-pore liquid monitoring and other forms of vadose zone
  monitoring may be approved if the discharger can clearly
  show that:
  - (1) The stored substance is susceptible to detection by the proposed technique.
  - (2) The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable.

- (3) Ine site and soil characteristics will not prevent detection of an unauthorized release by the monitoring system.
- (4) The proposed technique will be effective in providing early detection of underground storage tank leakage.
- (h) Borings shall be described in accordance with the provisions of the Subsections 2648(t) and (u) of this article.

Authority: H&SC 25299.3 Reference: H&SC 25292

### Adopt new Section to read:

# 2647. Ground Water Monitoring

- (a) All owners of existing underground storage tanks

  implementing one of the monitoring alternatives in Section

  2641 of this article which requires ground water monitoring

  shall implement a ground water monitoring system pursuant to

  Subsections (b) through (j) of this section.
- (b) All ground water monitoring wells shall be located as close
  as possible to the underground storage tank or the perimeter
  of the underground storage tank cluster.
- (c) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the underground storage tank potiom. However, wells shall not extend through laterally extensive clay layers that are below the water table and are at least 5 feet thick. In these situations, the well shall be terminated 1 to 2 feet into this clay layer.
- (d) Ground water monitoring well casings shall extend to the

  bottom of the boring and be factory perforated from a point

  1 foot above the bottom of the casing to an elevation which

- is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface, whichever is the lowest point above the highest anticipated ground water level.
- (e) Ground water monitoring wells shall be constructed as

  filter-packed wells that will prevent the migration of the

  natural soil into the well and with factory perforated

  casing that is sized to prevent migration of filter material

  into the well.
- (f) All well casings shall have a bottom cap or plug.
- (g) Filter packs shall extend at least 2 feet above the top of the perforated zone except where the ground surface is less than 10 feet above the highest ground water level, in which case this requirement may be waived by the local agency provided the filter pack extends to the top of the perforated zone.
- (h) Ground water monitoring wells shall be constructed with

  casings having a minimum inside diameter of 2 inches which

  is installed in a boring whose diameter is at least 4 inches

  greater than the inside diameter of the casing.

- (1) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack.
- (j) Borings shall be described in accordance with the provisions of Sections 2648(t) and (u) of this article.

Authority: H&SC 25299.3 Reference: H&SC 25292 Adopt new Section to read:

2648. General Construction and Sampling Methods

- (a) Soil and water sampling equipment and materials used to

  construct a well shall be compatible with the stored

  hazardous substance and shall not donate, capture, mask, nor
  alter the constituents for which analyses will be made.
- (b) Representative samples of all imported materials used for filter packs and to construct seals shall be evaluated to determine their acceptability with regard to Subsection (a) of this section.
- (c) All drilling tools shall be thoroughly cleaned immediately before a boring is started.
- (d) All well casings, casing fittings, screens, and all other components that are installed in the well shall be thoroughly cleaned before installation in the boring.
- (e) All soil and water samplers shall be cleaned before each sample is taken.
- (f) Drilling fluid additives shall be limited to inorganic, non-

hazardous materials which conform to the provisions of

Subsection (a) of this section. All additives used and the

depth in which they were used shall be accurately recorded

in the boring log.

- (g) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents.
- (h) All ground water monitoring wells shall be appropriately developed until the discharge water contains less than 10 ppm settleable solids.
- (1) Well heads shall be provided with a water-tight cap.
- (j) Well heads shall be enclosed in a surface security structure that protects the well from the entry of surface water, accidental damage, unauthorized access, and vandalism. This may be accomplished by providing a locked well cap or by securing the facility within which a well is located.
- (k) Pertinent well information including well identification,
  well type, well depth, well casing diameters if more than
  one size is used, and perforated intervals shall be
  permanently afixed to the interior of the surface security

structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

- (1) Surface seals for vapor wells that are completed no more
  than 5 feet below the bottom of the underground storage tank
  and which are above any free water zones shall be required
  at the discretion of the local agency on a site-specific
  basis.
- (m) If surface seals for vapor wells that are completed in or below a free water zone are required, the seal shall not extend below the top of the underground storage tank.
- (n) Vapor wells constructed wholly within backfill that

  surrounds the underground storage tank and which extends to

  the ground surface need not be sealed against infiltration
  of surface water.
- (o) The need for surface seals for other types of vadose zone installations shall be determined on a case-by-case basis.
- (p) In order to implement monitoring Alternatives 2, 3, 4, and the ground water monitoring portion of 5, the highest anticipated ground water level and existing ground water

level shall be determined. Highest anticipated ground water levels shall be determined by a review of water level measurements on record for wells within 1 mile of the site. Existing site ground water levels shall be established by either water level measurements taken within the last 2 years in all existing well(s) including at least 1 downgradient well within 500 feet of the facility which is perforated in the zone of interest or by drilling at least 1 exporatory boring constructed as follows:

- (1) The exploratory boring shall be drilled downgradient if possible and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than 500 feet from the underground storage tank.
- (2) The exploratory boring may be of any diameter capable of allowing the detection of first water.
- (3) The exploratory boring shall be drilled to first

  perennial ground water or to a minimum depth of 100

  feet for Alternatives 2, 3, and 6 or to a minimum depth

  of 30 feet for Alternative 4.
- (4) If ground water is encountered and ground water

- monitoring is part of the monitoring alternative, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section and Section 2647 of this article.
- (5) If ground water is encountered but monitoring is not required or if the exploratory boring does not encounter ground water, it shall be sealed in accordance with the provisions of Subsections 2648(q) and 's) of this article.
- (q) All borings that are not used for ground water or

  vadose zone monitoirng shall be sealed from the ground

  surface to the bottom of the boring with bentonite

  grout.
- monitoring wells in which the monitored interval is
  shallower than the total depth of the boring shall have
  the portion of the boring which is below the monitored
  interval sealed with bentonite grout.
- (s) All slurry-type grouts used to abandon a boring or for well seals shall be emplaced by the tremie method.

- (t) All borings shall be described in detail using the

  Unified Soil Classification System and shall be logged
  by a professional geologist, civil engineer, or

  engineering geologist who is registered or certified by
  the State of California and who is experienced in the
  use of the Unified Soil Classification System. A
  technician trained and experienced in the use of the
  Unified Soil Classification System who is working under
  the direct supervision of one of the aforementioned
  professionals shall be deemed qualified to log borings,
  provided the aforementioned professional reviews the
  logs and assumes responsibility for the accuracy and
  completeness of the logs.
- (u) All wet zones above the free water zone shall be noted and accurately logged.
- (v) If evidence of contamination is detected by sight,
  smell, or other field analytical methods, drilling
  shall be halted until the responsible professional
  determines if drilling deeper is advisable.

Authority: H&SC 25299.3 Reference: H&SC 25292

# Article 5. Release Reporting Requirements

Adopt new section to read:

# 2650 Applicability

- (a) All unauthorized releases from the primary or secondary

  container shall be reported according to the requirements of

  the appropriate sections of Chapter 6.7 of Division 20 of

  the Health and Safety Code and this article.
- described in Section 25284.3 of the Health and Safety Code, shall be recorded on the operator's monitoring reports according to Section 2651 of this article. No other report shall be required if the leak detection monitoring system in the space between the primary and secondary containers can be reactivated within 3 hours. This provision shall be applicable only to new underground storage tanks as defined in Article 2 of this subchapter.
- (c) All other unauthorized releases shall be reported within 24
  hours after the release has been, or should have been,
  detected according to Section 2652 of this article.

Authority: H&SC 25299.3

Reference: H&SC 25294, 25285

Adopt new section to read.

# 2651. Unauthorized Releases Requiring Recording

- (a) The report required by Subsection 2650(b) of this article shall include:
  - (1) List of type, quantities, and concentration of hazardous substances released.
  - (2) Method of cleanup.
  - (3) Method and location of insposal of the released

    hazardous substances (indicate whether a hazardous waste manifest[s] is utilized).
  - (4) Method of future leak prevention or repair. If this

    involves a change as defined in Article 10, Section

    2712, Subsection (a), of this subchapter, then

    appropriate reports pursuant to that article shall also
    be filed.
  - (5) If the primary container is to continue to be used,

    then a description of how the monitoring system between

    the primary and secondary container has been re-

activated.

- (6) Facility operator's name and telephone number.
- (7) The approximate costs for cleanup to be submitted voluntarily.
- the local agency shall review the information submitted pursuant to Subsection (a) of this section and shall review the permit and may inspect the underground storage tank pursuant to the provisions of Article 10, Section 2712, Subsections (g) and (h), of this subchapter. The local agency shall find that the containment and monitoring standards of Article 3 of this subchapter can continue to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow compliance with the standards.
- (c) Deterioration of the secondary container is likely when any of the following conditions exist:
  - (1) The secondary container will have some loss of integrity due to contact with the stored hazardous substances;

- (2) The mechanical means used to cleanup the released

  hazardous substance could damage the secondary

  container; or
- (3) Hazardous substances, other than those stored in the primary container, are added to the secondary container for treatment or neutralization of the released hazardous substance as part of the cleanup process.
- (d) If a recordable unauthorized release becomes a reportable unauthorized release due to initially unanticipated facts, the release shall immediately be treated as a reportable release pursuant to Section 2652 of this article.

Authority: H&SC 25299.3 Reference: H&SC 25294 Adopt new section as follows:

- 2652. Unauthorized Releases Requiring Reporting
- (a) All other unauthorized releases shall be reported as specified in this section.
- (b) Within 24 hours after the release has been detected, or should have been detected, using required monitoring, the operator shall notify the local agency and the State Office of Emergency Services or the regional board.
- (c) Within 5 working days of detecting the release, the operator
  or permittee shall submit to the local agency a full written
  report to include all of the following information which is
  known at the time of filing the report:
  - (1) List of type, quantity, and concentration of hazardous substances released.
  - (2) The results of all investigations completed at that
    time to determine the extent of soil or ground water or
    surface water contamination due to the release.
  - (3) Method of cleanup implemented to date, proposed cleanup

- actions, and approximate cost of actions taken to date.
- (4) Method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water (indicate whether a hazardous waste manifest[s] is utilized).
- (5) Proposed method of repair or replacement of the primary and secondary containers. If this involves a change as defined in Subsection 2712(a) of Article 10 of this subchapter, then appropriate reports pursuant to that article shall also be filed.
- (6) Facility operator's name and telephone number.
- (d) Until cleanup is complete, the operator or permittee shall submit reports to the local agency and the regional board every 3 months or at a more frequent interval specified by a responsible agency. The reports shall include the information requested in Subsections (c)(2), (c)(3), and (c)(4) of this section.
- (e) The reporting requirements of this section are in addition
  to any reporting requirements specified by Section 13271 of

  Division 7 of the Water Code and other laws and regulations.

Authority: H&SC 25288.2

Reference: H&SC 25284.4

### Article 6. Allowable Repairs

Adopt new section to read:

# 2660. Applicability

- (a) This article describes the conditions which must be met to allow primary container repairs of underground storage tanks containing motor vehicle fuel not under pressure utilizing the interior coating process, the required repair methodology, and the required underground storage tank testing following repair.
- (b) Section 2661 of this article lists the required evaluations
  which must be completed in order to allow the repair of a
  primary container. A satisfactory demonstration of each
  part of Section 2661 of this article shall be made prior to
  approval by the local agency of the repair process.
- (c) Section 2662 of this article describes the required methodology which must be utilized in the interior coating repair process.
- (d) Section 2663 of this article lists the required primary
  container monitoring which shall be implemented by amendment

of the permit by the local agency following primary container repair. Subsections (a) and (b) of Section 2663 of this article describe the monitoring which shall be performed prior to placing the underground storage tank back in service.

Authority: H&SC 25299.3 Reference: H&SC 25295 Adopt new section to read:

# 2661. Repair Evaluation

- (a) The evaluations described in Subsections (b) through (d) of this section must be completed before a primary container repair can be authorized by the local agency. Failure to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below shall be grounds for a local agency to deny the proposed repair.
- (b) It shall be determined if the failure mechanism is isolated to the actual failure or is affecting other areas of the underground storage tank, or if any other failure mechanism is affecting the primary container.
- (c) One of the following tests shall be conducted to determine
  the trickness of the underground storage tank:
  - (1) in ultrasonic test.
  - (2) Sertification by a special inspector that the shell

    #111 provide structural support for the interior

    Lining. The special inspector shall make this

certification by entering and inspecting the entire interior surface of the underground storage tank and shall base this certification upon the following procedures and criteria:

- (A) If the underground storage tank is made of glass fibre, the underground storage tank shall be cleaned so that no residue remains on the underground storage tank wall surface. The special inspector shall take interior diameter measurements and, if the cross-section has compressed more than I percent of the original diameter, the underground storage tank shall not be certified and shall also not be returned to service. The special inspector shall also conduct an interior inspection to identify any area where compression or tension cracking is occurring and shall determine whether additional glass fibre reinforcing is required for certification before the underground storage tank may be lined.
- (B) If the underground storage tank is made of steel,
  the underground storage tank interior surface
  shall be abrasive blasted completely free of
  scale, rust, and foreign matter. Acceptable

procedures for metal blasting are provided in

Appendix I of this subchapter. The special

inspection shall sound any perforations or areas

showing corrosion pitting with a brass ballpeen

hammer to enlarge the perforation or break through
a potentially thin steel area. Underground

storage tanks that have any of the following
defects shall not be certified or returned to

service:

- (1) An underground storage tank which has an open seam or a split longer than 3 inches.
- (11) An underground storage tank which has a perforation larger than 1-1/2 inches in diameter or below a gauging opening larger than 2-1/2 inches in diameter.
- (111) An underground storage tank with 5 or more perforations in any 1 square-foot area and any single perforation which is larger than 1/2 inch in diameter.
- (iv) An underground storage tank with 20 or more perforations in a 500 square-foot area and any

single perforation which is larger than 1/2 inch in diameter.

Authority: H&SC 25299.3 Reference: H&SC 25296

- (v) Any failure or opening within 6 inches of any seam or weld.
- (3) A test approved by the board as comparable to the tests specified in subparagraph (A) or (B) of this subsection.
- (d) It shall be demonstrated to the satisfaction of the local agency based on one of the tests in Subsection (c) of this section that a serious corrosion problem does not exist. If a serious corrosion problem exists, an interior liming repair may be allowed by the local agency if it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threaten the structural integrity or containment ability of the underground storage tank.
- (e) If interior lining is the proposed repair method, then it shall be demonstrated that the primary container has never been repaired using an interior lining.

6.

Adopt new section to read:

Authority: H&SC 25299.3

Reference: H&SC 25296

# 2662. Repair Methodology

- (a) If an interior lining of an underground storage tank is approved by the local agency based on satisfactory demonstration of the issues raised in Section 2661 of this article, then the repair must be accomplished according to the applicable subsections of this section.
- (b) If interior coating is the method of repair, the material used in the repair shall be applied in accordance with nationally recognized engineering practices.
- (c) The repair material and any adhesives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to contact with the hazardous substance being stored.
- (d) The repair material and lining process shall be listed or certified by a nationally recognized independent testing organization. The requirement shall become effective 1 year after the effective date of these regulations or, 1 year after a listing or certification procedure is available, whichever is later.

Adopt new section to read:

Article 7. Closure Requirements

### 2663. Primary Container Monitoring

- (a) After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the underground storage tank test as described in Section 2643 of Article 4 of this subchapter. The underground storage tank shall also be vacuum tested at a vacuum of 5.3 inches (135 mm) dg for 1 minute. The vacuum test shall not be required if technology is not available for testing the underground storage tank on-site using accepted engineering practices.
- (b) All pipelines shall be pressure tested following repair to
  assure the adequacy of the repair. The testing shall be
  accomplished using accepted procedures. Acceptable

  procedures for pressure testing are provided in Appendix I
  of this subchapter.

Authority: H&SC 25299.3 Reference: H&SC 25295 Adopt new section to read:

# 2670. Applicability

- (a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.
- (b) The temporary closure requirements of Section 2671 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased but where the underground storage tank owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances consistent with permit conditions.
- (c) The permanent closure requirements of Section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and where the owner or operator has no intent within the next 2

years to use the underground storage tank for storage of hazardous substances.

- (d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored even though there is no use being made of the stored substance. In these cases, the applicable containment and monitoring requirements of Article 3 or 4 of this subchapter shall continue to apply.
- (e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to Section 2671 or 2672 of this article, the applicable containment and monitoring requirements of Article 3 or 4 of this subchapter shall continue to apply.
- submit to the local agency a proposal describing how the owner intends to comply with Section 2671 or 2672 of this article, as appropriate. The requirement for prior submittal is waived if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release. In this situation, the underground storage tank owner shall submit the required proposal within 14 days of either the discovery of an unauthorized release or the implementation of actions

taken to prevent or minimize the effects of the unauthorized release.

- unauthorized release do not qualify for temporary closure
  pursuant to Section 2671 of this article until the
  underground storage tank owner demonstrates to the local
  agency's satisfaction that appropriate authorized repairs
  have been made which would allow the underground storage
  tank to be capable of storing hazardous substances pursuant
  to the permit issued by the local agency.
- (h) Underground storage tanks that have experienced an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 of this article.

Authority: H&SC 25299.3

Reference: H&SC 25298

Adopt new section to read:

### 2671. Temporary Closure

- (a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances.
- (b) The owner or operator shall comply with all of the following:
  - (1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code.
  - (2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank, either in part or as a whole, shall be purged of the flammable vapors to levels that would preclude an explosion or such lower levels as may be required by the local agency.
  - (3) The underground storage tank may be filled with a

- noncorrosive liquid that is not a hazardous substance.

  Inis liquid must be tested and results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.
- (4) Except for required venting, all fill and access
  locations and piping shall be sealed utilizing locked
  caps or concrete plugs.
- (5) Power service shall be disconnected from all pumps

  associated with the use of the underground storage tank

  except if the pump services some other equipment which
  is not being closed.
- (c) The mo-itoring required pursuant to the permit may be modified or eliminated during the temporary closure period by the local agency. The local agency shall consider, in making the above decision, the need to maintain monitoring in order to detect unauthorized releases that may have occurred during the time the underground storage tank was used but that have not yet reached the monitoring locations and been detected.
- (d) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to assure that the temporary closure actions are still in place. This shall

#### include:

- (1) Visual inspection of all locked caps and concrete plugs.
- (2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to Subsection (b)(3) of this section.

Authority: H&SC 25299.3

Reference: H&SC 25298

#### Adopt new section to read:

# 2672. Permanent Closure Requirements

- (a) Owners of underground storage tanks subject to permanent
  closure shall comply with either Subsection (b) of this
  section for underground storage tank removal or Subsection
  (c) of this section for closure in place. It is not
  essential that all portions of an underground storage tank
  be permanently closed in the same manner; however, all
  actions shall comply with the appropriate subsection of this
  section. Subsections (d) and (e) of this section regarding
  no discharge demonstration applies to all underground
  storage tanks subject to permanent closure.
- (b) Owners of underground storage tanks proposing to remove the underground storage tank shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code, in addition to the following:
  - (1) All residual liquid, solids, or sludges shall be removed.
  - (2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank, either in part or as a whole, shall be

- purged of the flammable vapors to levels that would preclude explosion or such lower levels as may be required by the local agency.
- (3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed.
- (4) An owner of an underground storage tank or any part of
  an underground storage tank that is destined for a
  specific reuse shall identify to the local agency the
  future underground storage tank owner, operator,
  location of use, and nature of use.
- (5) An owner of an underground storage tank or any part of
  an underground storage tank that is destined for reuse
  as scrap material shall identify this reuse to the
  local agency.
- (c) Closure of underground storage tanks in place shall comply with the applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code, in addition to all of the following:
  - (1) All residual liquid, solids, or sludges shall be . removed.

- (2) All piping associated with the underground storage tank
  shall be removed and disposed of unless removal might
  damage structures or other pipes that are being used
  and that are contained in a common trench, in which
  case the piping to be closed shall be emptied of all
  contents and capped.
- (3) The underground storage tank, except for the piping that is closed pursuant to Subsection (2) of this subsection, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank.
- (4) A notice shall be placed in the deed to the property.

  The notice shall describe the exact vertical and areal location of the closed underground storage tank, the bazardous substances it contained, and the closure method.
- (d) The owner of an underground storage tank being closed

  pursuant to this section shall demonstrate to the

  satisfaction of the local agency that no unauthorized

  release has occurred. This demonstration can be based on
  the orgoing leak detection monitoring, ground water

monitoring, or soils sampling performed during or immediately after closure activities.

If feasible, soil samples shall be taken and analyzed according to the following:

- (1) If the underground storage tank or any portion thereof
  is removed, then soil samples from the soils
  immediately beneath the removed portions shall be
  taken. A separate sample shall be taken for every 200
  square-feet for underground storage tanks or every 20
  lineal-feet of trench for piping, at a minimum.
- (2) If the underground storage tank or any portion thereof
  is not removed, soils sampling pursuant to Section 2645
  of Article 4 of this subchapter shall be implemented,
  if feasible.
- (3) Soils shall be analyzed for all constituents of the previously stored hazardous substances and their breakdown or transformation products.
- (e) The detection of any unauthorized release shall require compliance with the reporting requirements of irticle 5 of this subchapter.

Authority: H&SC 25299.3

Reference: H&SC 25298

Article 8. Categorical and Site-Specific Variance Procedures

Adopt new section to read:

# 2680. Applicability

- (a) This article sets up procedures for categorical and sitespecific variances from the requirements for the

  construction and monitoring of new and existing underground
  storage tanks as described in Chapter 6.7 of Division 20 of
  the Health and Safety Code and Articles 3 and 4 of this
  subchapter. A site-specific variance, if approved, would
  apply only to the specific site(s) approved for a variance.
  A categorical variance, if approved, would apply to the
  region, area, or circumstances approved for a variance. A
  categorical variance application shall include more than one
  site or shall be non-site specific. These procedures are in
  addition to those established by the appropriate sections of
  Chapter 6.7 of Division 20 of the Health and Safety Code.
- (b) Section 2681 of this article specifies the procedures that must be followed by the applicant and the State Board for categorical variance requests.
- (c) Section 2682 of this article specifies the procedures that

must be followed by the applicant, local agency, and the regional board for site-specific variance requests.

Authority: PASC 25299.3 Reference: HASC 25299.4

#### 2681. Categorical Variances

- (a) A categorical variance allows an alternative method of construction or monitoring which is applicable to more than one local agency jurisdiction. Application for a categorical variance shall be made by the permittee to the State Board on a form provided by the State Board.
- (b) Application for a categorical variance shall include, but not be limited to:
  - (1) A description of the provision from which the variance is requested.
  - (2) A description of the proposed alternative program, method, device, or process.
  - (3) A description of the region, area, or circumstances under which the variance would apply.
  - (4) Clear and convincing evidence that the proposed

    alternative will adequately protect the soil and the
    beneficial uses of waters of the state from an

#### unauthorized release.

- (5) A list including names and addresses of all persons

  known to the applicant who may be affected by or may be
  interested in the variance request.
- (6) An initial payment of \$11,000.
- (c) The applicant will be required to pay a fee based on the

  actual costs of considering the application. The State

  Board will bill the applicant for additional costs or refund

  any remaining part of the initial fee, if necessary.
- (d) The State Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.
- (e) The State Board shall complete any documents necessary to satisfy the California Environmental Quality Act (Division 13, commencing with Section 21000, of the Public Resources Code).
- (f) The State Board shall remand the application to the appropriate regional board if it determines that the

application falls within Section 2682 of this article.

- (g) The State Board shall hold at least 2 public hearings in different areas of the state within 180 days of receipt of a complete variance application to consider the request for a categorical variance.
- (h) Upon the close of a hearing, the presiding officer may keep the hearing record open for a definite time, not to exceed 30 days, to allow any interested person to file additional exhibits, reports, or affidavits.
- (1) If the State Board grants the variance, it will prescribe
  the conditions the applicant must maintain and will describe
  the specific alternative for which the variance is being
  granted.
- (1) All permit applicants who intend to utilize an approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the variance applies, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the State Board provided all

other permit conditions are met.

(k) The State Board shall modify or revoke a categorical variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The State Board shall not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and Subchapters 1.5 and 6 of this chapter. The State Board shall notify all affected local agencies of the modification or revocation. Local agencies shall modify or revoke all permits which were based on the categorical variance.

Authority: HASC 25299.3 Reference: HASC 25299.4

#### 2682. Site-Specific Variances

- (a) A site-specific variance allows an alternative method of construction or monitoring which would be applicable at one or more sites within one local agency's jurisdiction.

  Application for a site-specific variance shall be made by the permittee to the appropriate regional board on a form provided by the regional board.
- the permittee shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods or if the local agency does not act within 60 days of its receipt of the permittee's complete construction and monitoring plan, the permittee may proceed with a variance application.
- (c) Application for a site-specific variance shall include, but not be limited to:

- (1) A description of the provision from which the variance is requested.
- (2) A detailed description of the complete construction and monitoring methods to be used. The proposed alternative program, method, device, or process shall be clearly identified.
- (3) Any special circumstances on which the applicant would rely to justify the findings necessary for the variance, as prescribed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.
- (4) That the proposed alternative will adequately protect
  the soil and the beneficial uses of waters of the state
  from an unauthorized release.
- (5) Any documents necessary to satisfy the California

  Environmental Quality Act (Division 13, commencing with

  Section 21000, of the Public Resources Code).
- (6) A fee of \$2,750 for variance requests at one site. A fee of \$5,500 for variance request at more than one site within one local agency's jurisdiction.

- (d) The regional board shall review all applications submitted
  and shall notify the applicant in writing within 30 days of
  receipt of the application as to whether or not the
  application is complete.
- (e) The regional board shall hold a hearing on the proposed alternative within 60 days after receiving a complete variance application; however, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code for local agencies to join in the application.
- additional conditions and shall describe the specific alternative system for which the variance is being granted.

  The regional board shall notify the applicant and the local agency of its decision.
- (g) The regional board shall consider the local agency's recommendations in rendering its decision. The regional board shall consider the completeness and accuracy of the information provided by the applicant in Subsection (e) of this section in rendering its decision.

- (h) If the variance request is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the regional board. A local agency shall not modify the permit unless it determines that the modification is consistent with the variance that has been granted.
- (1) The regional board shall modify or revoke a variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The regional board shall not modify nor revoke the variance until it has followed procedures comparable to those prescribed in this section and Subchapters 1.5 and 6 of this chapter. The regional board shall notify the local agency of the modification or revocation. The local agency shall modify or revoke the permit for the site.

Authority: H&SC 25299.3 Reference: H&SC 25299.4 Article 9. Local Agency Additional Standards Request Procedures

Adopt new section to read:

#### 2690. Applicability

(a) This article sets up procedures for local agencies to request State Board authorization for more stringent standards than those set by Article 3 of this subchapter.

These procedures are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

Authority: H&SC 25299.3 Reference: H&SC 25299.4 Adopt new section to read:

# 2691. Additional Standards Request Procedures

- (a) Local agency application for additional standards shall include:
  - (1) Description of the proposed design and construction standards which are in addition to those described in Article 3 of this subchapter.
  - Standards are necessary. Clear and convincing evidence that the additional standards would adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases.
  - (3) Any documents required by the California Environmental

    Quality Act (Division 13, commencing with Section 21000

    of the Public Resources Code).
    - (4) An initial fee of \$5,500.
- (b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The board will

- bill the applicant for additional costs or refund any remaining part of the initial fee, if necessary.
- (c) The board shall conduct an investigation and public hearing
  on the proposed standards and their need to protect the soil
  and beneficial uses of the water before determining whether
  to authorize the local agency to implement additional
  standards.
- authorization allowing the implementation of additional standards if it finds that, based on new evidence, the additional standards are not necessary to adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases. The board shall not modify nor revoke the authorization until it has followed procedures comparable to those presented in Subchapters 1.5 and 6 of this chapter.

Authority: H&SC 25299.3 Reference: H&SC 25299.4 Article 10. Permit Application, Annual Report and Trade Secret Requirements

"Adopt new section to read:

# 2710. Applicability

- (a) This article describes specific administrative actions that must be accomplished by all underground storage tank owners, local agencies, and the State Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.
- (b) Section 2711 of this article lists the information that must be submitted by the underground storage tank owner to the local agency as part of the permit application.
- (c) Section 2712 of this article describes the conditions that local agencies must include in all permits issued and conditions which local agencies must meet prior to permit issuance.
- (d) Section 2713 of this article describes the annual report requirements for local agencies.

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(e) Section 2714 of this article specifies conditions that must be met by an underground storage tank owner when requesting trade secret provisions for any information submitted to the local agency, State Board, or regional board. It also specifies how the local agency, the State Board, or regional board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

Authority: H&SC 25299.3

Reference: H&SC 25284, 25285, 25286, 25288, 25289,

25290, 25293

Adopt new section to read:

# 2711. Permit Application and Information

- (a) The permit application shall include, but not be limited to,
  the following information if it is accurately known to the
  permit applicant:
  - (1) The name and address of the person who owns the underground storage tank or tanks.
  - (2) The name, location, mailing address, and phone number where the underground storage tank is located and type of business.
  - (3) The name, address, and telephone numbers of the underground storage tank operator and 24-hour emergency contact person.
  - (4) The name and telephone number of the person making the application.
  - (5) Description of the underground storage tank including,
    but not limited to, underground storage tank and
    auxiliary equipment manufacturer, year of manufacture,

- capacity, history of repairs, and operation methods schedule.
- (6) In the case of new underground storage tanks installed with systems for secondary containment utilizing membrane liners, a certification by the membrane liner material manufacturer that the membrane liner meets the standards set forth in Subsection 2631(c) and (j)(1) and (2) of Article 3 of this subchapter, or, if applicable, Subsection 2633(e)(1) and (2) of Article 3 of this subchapter; and a certification by the membrane liner fabricator that the membrane liner meets the standards set forth in Subsection 2631(c) and (j)(3) of Article 3 of this subchapter.
- (7) Construction details of the underground storage tank
  and any auxiliary equipment including, but not limited
  to, type and thickness of primary containment, type and
  thickness of secondary containment (if applicable),
  installation procedures, backfill, lining, wrapping,
  and cathodic protection methods (if applicable).
- (8) A diagram or design or as-built drawing which indicates
  the location of the underground storage tank
  (underground storage tank, piping, auxiliary equipment)

with respect to buildings or other landmarks.

- (9) The <u>jescription</u> of the proposed monitoring program including, but not limited to, the following where applicable:
  - (A) Visual;
  - (B) Underground storage tank testing or inspection procedures;
  - (C) Inventory reconciliation including gauging and reconciliation methods;
  - (D) Soils sampling locations and methods and analysis procedures;
  - (E) Vadose zone sampling locations and methods and analysis procedures;
  - (F) Ground water well(s) locations, construction and completion methods, sampling, and analysis procedures; and
  - (G) Frequency and sensitivity of any monitoring method

# sensing instrument or analytical method.

- (10) A list of all the substances which previously,
  currently, or are proposed to be stored in the
  underground storage tank or tanks.
- (11) If the owner or operator of the underground storage
  tank is a public agency, the application shall include
  the name of the supervisor of the division, section, or
  office which operates the underground storage tank.
- (12) The permit application must be signed by:
  - (A) A principal executive officer at the level of
    vice-president or by an authorized representative.

    The representative must be responsible for the
    overall operation of the facility where the
    underground storage tank(s) is located;
  - (B) A general partner proprietor; or
  - (C) A principal executive officer, ranking elected

    official, or authorized representative of a public agency.

(b) The application shall be accompanied by the fee set by the local agency.

Authority: H&SC 25299.3

Reference: H&SC 25286

# 2712. Permit Conditions

- (a) As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority within 30 days after any changes in the usage of any underground storage tank, including:
  - (1) The storage of new hazardous substances;
  - (2) Changes in monitoring procedure; or
  - (3) The replacement or repair of all or part of any underground storage tank.
  - (b) As a condition of any permit to operate an underground
    storage tank, the permittee shall report to the local agency
    any unauthorized release occurrences, as defined in Article
    2 of this subchapter, within the time frame specified in
    Subsections 2652(b) and (c) of Article 5 of this subchapter.
  - (c) Written records of all monitoring performed shall be maintained on-site by the operator for a period of at least

3 years from the date the monitoring was performed. The local agency may require the submittal of the monitoring records or a summary at a frequency that they may establish. The written records of all monitoring performed in the past 3 years shall be shown to the local agency, regional board, State Board, or duly authorized representative upon demand during any site inspection. Monitoring records shall include:

- (1) The date and time of all monitoring or sampling;
- (2) Monitoring equipment calibration and maintenance records;
- (3) The results of any visual observations;
- (4) The results of all sample analysis performed in the laboratory or in the field, including laboratory data sheets;
- (5) The logs of all readings of gauges or other monitoring equipment, ground water elevations, or other test results; and
- (6) The results of inventory readings and reconciliations.

- (d) A permit to operate issued by the local agency shall be effective for 5 years. A local agency shall not issue a permit to operate an underground storage tank until the local agency inspects the underground storage tank and determines that the underground storage tank complies with the provisions of these regulations. The underground storage tank owner shall apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit.
- (e) The local agency shall have 18 months after it establishes a program implementing this subchapter to issue permits for all existing underground storage tanks.
- (f) Permits may be transferred to new underground storage tank owners if the new underground storage tank owner does not change any conditions of the permit, the transfer is registerd with the local agency within 30 days of the change in ownership, and any necessary modifications are made to the information in the initial permit application due to the change in ownership. A local agency may review, modify, or terminate the permit to operate the underground storage tank upon receiving the ownership transfer request.

- fine local agency shall not renew an underground storage tank permit unless the underground storage tank has been inspected within the prior 3 years and the inspection revealed that the underground storage tank complies with Article 3 or 4 of this subchapter, as applicable, and with all existing permit conditions. The inspection shall be conducted as specified in the appropriate subsection of Chapter 6.7 of Division 20 of the Health and Safety Code.

  If the inspection revealed noncompliance them the local agency must verify by a follow-up inspection that all required corrections have been implemented before renewing the permit.
- (h) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall file with the local agency a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring plan needed to achieve compliance with either Article 3 or Article 4 of this subchapter, as appropriate, or the permit conditions. This plan and time schedule shall also implement all of the recommendations of the special inspector. The local agency may exempt the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that the

# failure to implement the recommendation will not cause an unauthorized release.

Authority: H&SC 25299.3

Reference: H&SC 25284, 25285, 25288, 25289, 25293

Adopt new section to read:

#### 2713. Annual Report

(a) The local agency shall notify the State Board of any changes in permits as defined in Subsections (a) or (f) of Section 2712 of this article or any unauthorized releases as defined in Article 2 of this subchapter annually on the State Board's annual report forms or other methods determined by the State Board. This information shall be submitted to the State Board by March 1 of each year covering the prior calendar year.

Authority: H&SC 25299.3 Reference: H&SC 25286

#### 2714. Trade Secret Provisions

- (a) Any person providing information in an application for a permit to operate an underground storage tank or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes.
  - (1) Which portions of the information submitted are believed to be trade secrets;
  - (2) How long this information should be treated as confidential;
  - (3) Measures that have been taken to protect this information as confidential; and
  - (4) A discussion of why this information is a trade secret,

    including references to statutory and case law as
    appropriate.

- (b) If the local agency, the State Board, or the regional board determines that a request for confidentiality is clearly valid, the material shall be given trade secret protection as discussed in Subsection (f) of this section.
- (c) If the local agency, State Board, or the regional board determines that the request for confidentiality is clearly frivilous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the local agency. State Board, or the regional board is instructed otherwise by a court within 10 days of the date of the letter.
- (d) If the validity of the request for confidentiality is unclear, the local agency, the State Board, or the regional board will inform the person claiming trade secrecy that the burder is on him to justify the claim. The applicant will be given a fixed period of time to submit such additional information as the local agency, the State Board, or the regional board may request. The local agency, the State Board, or the Board, or the regional board shall then evaluate the request on the basis of the definition of "trade secrets" contained in the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code and issue its decision. If the

local agency, the State Board, or the regional board determines that the information is not a trade secret, it shall act in accordance with Subsection (c) of this section.

- (e) All information : exceived for which trade secrecy status is requested shall be treated as confidential as discussed in Subsection (f) of this section until a final determination is made.
- (f) Information while has been found to be confidential or regarding which a final determination has not been made shall be immediately filed in a separate "confidential" file. If a document or portion of a document is filed in a confidential file, a notation should be filed with the remainder of the jocument indicating that further information is in the confidential file.
- (g) Information contained in confidential files shall only be disclosed to authorized representatives of the applicant or other governmental agencies only in connection with the State Board's, the regional board's, or the local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code or Division 7 of the Water Code.
- (h) Nothing contained herein shall limit an applicant's right to

provisions of law.

Authority: 8450 24299 5 Reference: 8450 25290