B. Other Draft Regulations

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

Vol 3

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:

xx10. 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

   2) 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:

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 subsections c through f of Section xx42 of Article 4.

3) 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)(11) of this Article. 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) 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 water-proof 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.

1) 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:

1) 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:

1) 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.

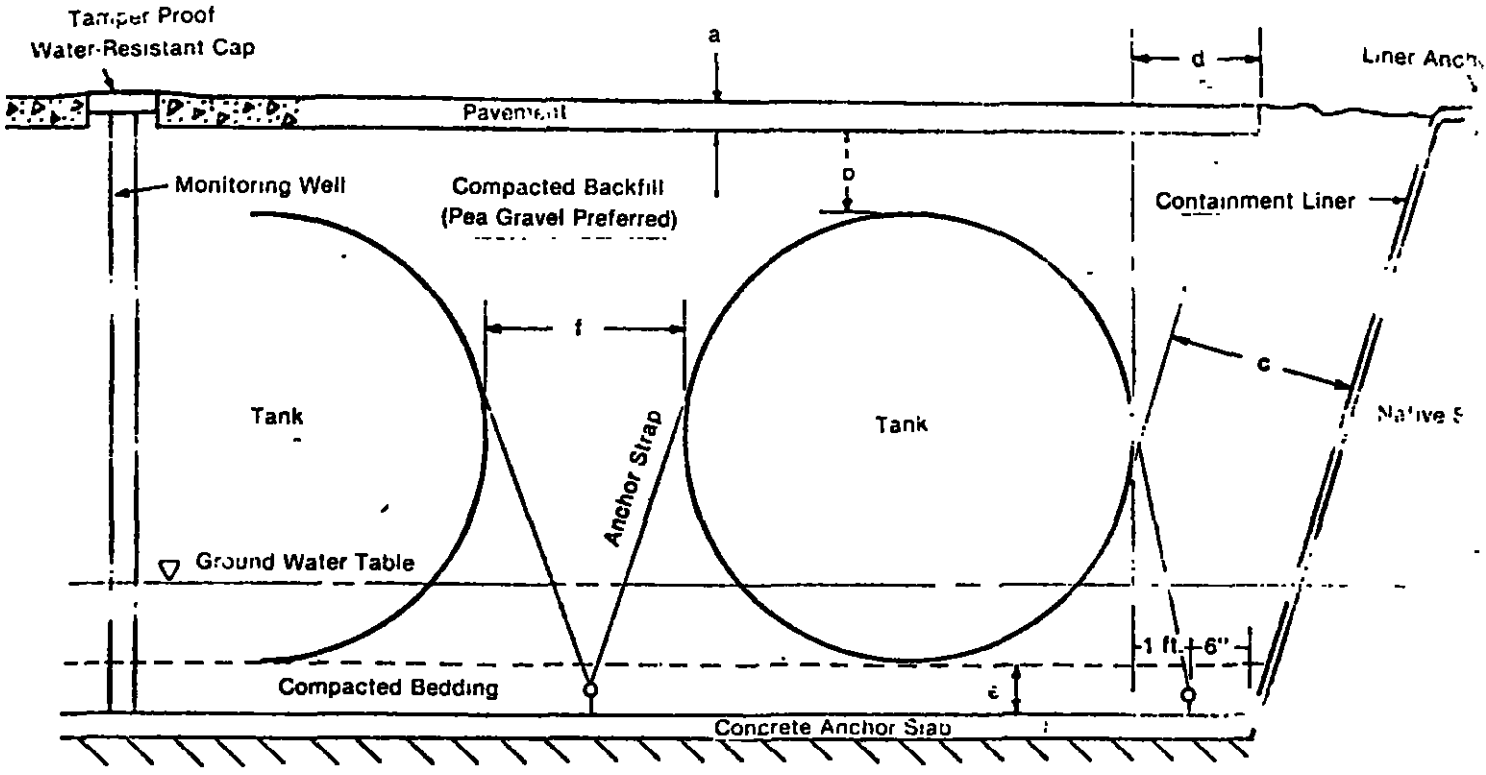
4) Drainage of precipitation from within a storage facility containing hazardous materials shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged.

5) The water shall be analyzed for the product(s) stored in the primary containment prior to initial removal and monthly 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 wall
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*
All Tanks	
Pavement Extensions(d)	12 inches
Distance Between Adjacent Tanks(f)	24 inches
Distance Between Tank and Bank of Excavation(c)	24 inches
Thickness of Compacted Bedding(e)	12 inches
Steel Tanks	
With Traffic Loads	
Reinforced Concrete Pavement(a)	6 inches
Plus Compacted Backfill Cover(b)	18 inches
or	
Asphaltic Concrete Pavement(a)	8 inches
Plus Compacted Backfill Cover(b)	18 inches
Without Traffic Loads	
Reinforced Concrete Pavement(a)	4 inches
Plus Compacted Backfill Cover(b)	12 inches

TYPE OF TANK	MINIMUM REQUIREMENT*
Fiberglass Reinforced Plastic Tanks (20,000 Gallons and Under)	
Maximum Burial Depth(b)	84 inches
With Traffic Load	
Reinforced Concrete Pavement(a)	6 inches
Plus Compacted Backfill Cover(b)	18 inches**
or	
Asphaltic Concrete Pavement(a)	6 inches
Plus Compacted Backfill Cover(b)	30 inches**
Without Traffic Loads	
Reinforced Concrete Pavement(a)	4 inches
Plus Compacted Backfill Cover(b)	12 inches**
Fiberglass Reinforced Plastic Tanks (Over 20,000 gallons)	
Maximum Burial Depth(b)	84 inches
With Traffic Loads	
Reinforced Concrete Pavement(a)	6 inches
Plus Compacted Backfill Cover (b)	36 inches
or	
Asphaltic Concrete Pavement(a)	6 inches
Plus Compacted Backfill Cover(b)	42 inches
Without Traffic Loads	
Reinforced Concrete Pavement(a)	6 inches
Plus Compacted Backfill Cover(b)	24 inches

Unless Otherwise Noted

***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 aggregate with a mix of particle sizes with diameters not less than 0.125 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.

4) The anchor slab or concrete deadmen shall be designed in accordance 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.

2) 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[1] - 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.

[1] 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 xx41 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;

2) 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:

1) 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 xx41 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:

1. 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

Underground Tank Regulations

California Administrative Code
Title 23 Waters
Chapter 3 Water Resources Control Board
Subchapter 16 Underground Tank Regulations

TABLE OF CONTENTS

Vol 3

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 operator of the tank(s) is not the owner then the owner shall enter into a written contract 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 shall implement the regulations in this subchapter within both the incorporated and unincorporated areas of the County without modification except as provided in 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 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 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 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 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 of this subchapter are not exempted 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) 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.

(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 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 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 Department of Health Services, in consultation with the Board, determines the substance could not adversely affect the quality of the waters of the State:

1. 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 of the Health and Safety Code.
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.

"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 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 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 constructed 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 withdrawal 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.

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 monitoring standards of Section 2634 must also be used.

(c) All new tank systems must comply 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 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 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 required 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 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 materials shall be considered single walled and shall not be construed to fulfill the requirements of both primary and secondary containment.

(h) Double walled tanks which satisfy the requirements of Sections 2631(b) and (c) shall be considered to fulfill the volumetric requirements for secondary 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 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, screened in the region of the sump, and covered with a locked waterproof cap.

(d) The casing shall be of sufficient thickness to withstand all anticipated applied stresses with a 1.5 safety factor and constructed of materials that will not be structurally weakened by the stored product nor dilute, 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 needed. 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 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 0.5 inches of the hazardous 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 Fuel 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 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 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(b) shall be subject to the requirements of Section 2631.

(d) The secondary container shall be demonstrated to achieve the integrity and compatibility criteria of Section 2631(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 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 and 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.

(f) 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 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 tank 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 on-line pressure loss detector and flow reduction device. The detector 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 as described in Section 2635(b)(1) of this article. 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 leakage of any hazardous substance to areas outside of the secondary container; and

(6) Extended to the ground surface and covered with a locked water-proof cap.

(c) Monitoring of each casing described in Section 2634(c) shall utilize a continuous sensor which is removable on a semi-annual basis for calibration 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. Thi system cannot be used when water is normally expected to be present within the casing; or

(2) Detecting within the casing 0.50 inches of the hazardous substance stored in the primary container(s) and activating a strategically-located, above-ground alarm system.

(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.

(1) 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 [illegible] timing of the response plan to clean-up the hazardous substances which have been discharged from the primary containment.

(e) An inventory control system for the storage of motor vehicle fuels shall be used to detect 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 (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 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 (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 reconciliation 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 completion of the daily reconciliation which indicates the loss or gain.

(2) The operator shall review the inventory records within two (2) hours to determine if an error exists which would cause the gain or loss to be less than that specified in subsection (g) of this section.

(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 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 Flammable 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 24 hours of the completion of subsection (7).

(7) The tank shall be tested using the tests described in Section 2642 of Article 4 within 48 hours of completion of subsection (6).

(8) Additional tests 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 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 hydrostatically or with pressure in accordance with standards and procedures set forth in Article 4.

(4) Cathodically protected steel tanks and steel tanks clad with glass fiber reinforced plastic shall be fabricated and designed by the requirements of Underwriters Laboratories (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 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 chemical 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 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 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.

(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 of hazardous substances from any part of the primary container to the monitoring location(s).

(11) 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. Manways shall be constructed as water-tight as practical. 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:

(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 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 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 final disposal. The liquid shall be sampled and analyzed immediately 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 manufacturer'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 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.

(g) The overflow protection system required in subsection (f) of this Section shall be satisfied for underground storage tanks containing motor vehicle fuels 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 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, maintained, and monitored cathodic protection system with or without coatings, or

(2) Corrosion resistant materials of construction such as special alloys or fiberglass-reinforced plastic coatings as specified in Subsection (i) of this Section.

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

(i) 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 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. The failure to implement an approved monitoring system shall be cause for closure of the underground storage tank pursuant to Article 7 of this subchapter.

(b) The intent of monitoring existing underground storage tanks is to detect leakage before the hazardous substance reaches ground water. Therefore, primary leak detection monitoring shall, in most cases, utilize 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 storage tank is not susceptible to visual monitoring, but a significant portion of the underground storage tank can be visually moitored, 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 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.

(e) All owners of existing underground storage tanks subject to this subchapter and not able to implement visual monitoring as specified in Section 2641 of this article, shall implement each alternate monitoring method specified in Sections 2642 through 2646 of this Article unless the exemption criteria in each section are met. The implementation of

soils monitoring specified in Section 2644 of this article is not exempted based on the ability to implement visual monitoring unless an alternative monitoring is approved by the local agency to meet the intent of subsection (c) of this section. The exemption criteria are based on a specific method being infeasible, not physically implementable or duplicative. If an owner demonstrates to the local agency that the exemption criteria apply the owner shall be relieved of the obligation to implement the specific method.

(f) Additional alternative monitoring methods may be approved by a local agency pursuant to the intent of subsections (b) 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.

(g) All owners of underground storage tanks shall, if feasible, install a verification monitoring system which monitors ground water beneath the underground storage tank. This system, as described in Section 2647 of this article, 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 occurred. Underground storage tank owners are exempt from this requirement if they meet the exemption criteria contained in Section 2647 of this article.

(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.

(i) 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.

2641. Visual Monitoring

(a) Visual monitoring shall be utilized as the primary leak detection monitoring method, where feasible, for all or 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 to 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 met the owner is exempted from implementing visual monitoring:

(1) Any portion of the underground storage tank 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 entire exterior of the underground storage tank would put a person in a physically unsafe environment.

(3) If a person would be required to use personal protection equipment (other 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 tank.

(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 immediately 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 immediately 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.

(3) Visual inspections shall be performed daily at a minimum, and shall be more frequent if necessary. Any unauthorized release shall 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 included in the permit.

(1) Laboratory analysis of the observed liquid.

(2) Testing of the underground storage tank system per procedures described in Sec. 2642 of this article.

(3) Removing all hazardous substances from the underground storage tank.

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 conditions described in subsection (c) of this section cannot be performed without significant excavation.

(c) Testing of underground storage tanks shall utilize a method 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, if applicable:

(1) 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 corrosion protection - test 10 years after installation, and yearly thereafter.

Category B: Corrosion resistant tanks[1] - 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.

[1] Common corrosion 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/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 pressurized 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).

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 susceptible to accepted technically available metering.

(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;

(2) 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 or 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 subsection (d) of this section:

(1) 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 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 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 be evaluated according to the methods and time schedules provided for in subsection (f) of Section 2636 of Article 3.

(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 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 calculated.

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 existing 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 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) Soil conditions prevent drilling by any generally existing technique.

(c) At least one slant 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 subsection (d) of this section shall be implemented.

(d) At those sites where slant drilling is precluded but vertical drilling is feasible, at least one vertical boring shall be drilled on each

side of the tank. The borings shall be located within 10 feet 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 encountering ground water, whichever occurs first.

(2) The soil samples shall be collected, transported, stored, and analyzed according to approved EPA methods.

(3) Analysis of the individual soil samples shall be as follows:

(A) If more than one boring is utilized, then samples from the same depth may be composited (if analytically possible without loss 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 site) then further soils analysis is not necessary pursuant to this subsection. However, the following additional actions will be required:

(i) 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 tank 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 before a permit can be issued.

(ii) Further investigation is needed to determine the magnitude and extent of any soil or ground water contamination 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.

(c) Samples shall be analyzed for one or more constituents that have been stored in the underground storage tank. If the underground 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.

(d) All borings 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 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 monitoring 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 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 tanks.

(2) Ground water is perpetually above a point 5 feet below the bottom of the underground storage tank and vadose zone monitoring is not responsive due to the characteristics (e.g., nonvolatility) of the hazardous 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 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 if the vapor characteristics of the stored product are susceptible to detection:

(1) Before any method of vapor monitoring 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.

(2) The depth at which each sensor is placed relative to the 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 leakage 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 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-pore liquid monitoring system.

(4) The proposed technique will be effective in providing early detection of tank leakage.

(h) Vadose zone monitoring shall be continuous where feasible and connected to an above-ground alarm 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 monitoring 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 article 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 below the invert of the underground storage tank.

(3) The 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 those 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 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 network shall be designed and constructed according to the following criteria:

(1) Three ground water monitoring wells shall be installed around the underground storage tank or facility at spacings of 120° of arc around the central point 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 perimeter of the facility.

(2) 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 gravel 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 tanks 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 water level possible during the life of the facility is at a depth greater than 200 feet.

(3) Proximity to physical obstacles prevents the positioning and operation of the drilling equipment within a horizontal distance of 500 feet of the tank or tank cluster perimeter.

(4) Soil conditions prevent drilling by any generally existing technique.

(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 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, 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 subsection (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:

(1) 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 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 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 boring shall be drilled to a minimum depth of 200 feet if 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 4-inch ID casing.

(B) 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 aquifers, the well shall extend to the bottom of the aquifer 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-annually at a minimum. 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 pH, 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 EPA 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 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, casing fittings, screens, gravel pads and all other components are to be thoroughly cleaned before installation in the boring.

(e) All soil and water samples shall be cleaned before each sample is taken.

(f) Drilling fluid additives shall be limited to inorganic, non-hazardous materials 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.

(h) All well 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 locking water tight cap.

(l) 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 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.

(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 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 criteria:

(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 unauthorized release shall be contained and the released hazardous substances 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) Method 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 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 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.

(d) 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

(2) 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 treatment or neutralization of the released hazardous substance as part of the clean-up process.

(e) 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 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 causes 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 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 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 (c)(2), (c)(3) and (c)(4) of this section.

(e) The local agency shall review the permit whenever there has been an unauthorized release or 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 requirements specified by other laws and regulations.

(g) The local agency, Regional Board, and Department of Health Services 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 to allow primary container repairs, to allow the use of interior coating 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 agency of the repair process.

(c) Section 2662 describes the required methodology which must be utilized in the interior coating repair process.

(d) Section 2663 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) describe 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 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 lining is the proposed 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 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 does not exist. If 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 minimize the corrosion and that the existing corrosion problem does not threaten 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 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 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. An example of such a practice is the American Petroleum Institute's recommended practice No. 1631.

(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.

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 Seciton 2-7.3 of the Flammable and Combustible Liquids Code adopted by the National Fire Protection Association on November 20, 1981 (NFPA 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 Piping or National Fire Protection Association Flammable and Combustible 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 these 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 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 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 intends 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 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 allow the underground storage tank to be capable of storing 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 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 with all of the following:

(1) All residual liquid, solids or sludges 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 hazardous waste.

(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 completely purged of the flammable vapors.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance.

(4) 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) 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 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 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.

2672. Permanent Closure Requirements

(a) Underground storage tanks subject to permanent closure 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 stored for future use or handled as a hazardous waste

(B) hazardous waste - legally recycled or disposed of as a hazardous 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 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 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 inconsistent 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

(B) 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 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 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 cut or punctured 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, solids, or sludges 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 hazardous waste.

(2) All piping associated with the tank shall be removed, handled 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.

(3) Soils shall be analyzed for all constituents 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.

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 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 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 water of the state from an unauthorized release.

(5) 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 of _____.

(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 remand the application to the appropriate Regional Board if it determines that the application falls within Section 2682.

(f) The State Board shall hold at least two 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. 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 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 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 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 will adequately protect the soil and the beneficial 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 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) 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.

(k) 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.

(l) 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.

(m) 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 water of the state from an unauthorized release. The State Board will not modify or revoke a categorical 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 Quality 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 demonstrating 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 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 documents necessary to satisfy the California Environmental Quality Act (Division 13, commencing with Section 21000, of the

Public Resources Code).

(6) A fee of _____.

(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 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 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 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.

(k) 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.

(l) 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 notify 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 Subchapter.

2691. 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 unauthorized releases.

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

(4) A fee of _____.

(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 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 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 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 adequately protect the soil and beneficial uses of the waters of the State from unauthorized releases. The State Board will not modify or revoke the authorization until it has followed procedures comparable to those outlined herein for issuance of the authorization.

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

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, firm, 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.

(4) The name and telephone nukmber of the person making the application.

(5) The underground 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, lining, wrapping, and cathodic 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 monitoring program, including, but not limited to the following where applicable:

(A) visual;

(B) tank testing or inspection procedures;

(C) inventory controls including 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 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.

(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 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 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 regulations.

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 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 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 within the time frame specified in subsections 2652(b) and (c)).

(c) A permit to operate issued by the local agency shall be effective for five years. 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.

(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. 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 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 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 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, as applicable of this subchapter and with all existing permit conditions. The inspection shall be conducted as specified in subsection (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 required corrections 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. 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 materials shall be filed with the local 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 (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 permit; 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.

2703. Annual Report

(a) The local agency shall notify the State Board of any changes in permits as defined in subsections (a) or (d) 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 covering the prior calendar year.

2704. 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 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 submitted 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 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) If 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 agency or the 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 trade secret is unclear, the local agency or 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 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 or Regional 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.

(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 further information is in the confidential file.

(g) Information contained in confidential files shall only be disclosed to authorized 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's right to obtain prevention of disclosure of information pursuant to other provisions of law.

3. Draft regulations dated August 13, 1984

Underground Tank Regulations

California Administrative Code
Title 23 Waters
Chapter 3 Water Resources Control Board
Subchapter 16 Underground Tank Regulations

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Vol 3

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 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 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 the provisions of this subchapter within its boundaries.

(d) All owners of underground 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 6, the closure requirements of Article 7, and the permit application requirements of Article 10.

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) 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 25284.1 provided that:

(A) The ordinance, as it may be amended, continues to meet at a minimum the requirements of Article 3 and Article 4 of this subchapter or implements the requirements of Health and Safety Code Sections 25284 and 25284.1; and

(B) The county or city issues permits for underground tanks pursuant to the ordinance and submits a copy of the permit application to the State Board as specified in Article 10 of this subchapter.

(C) The county or city submits information on all unauthorized releases as specified in Article 5 of this subchapter.

(D) The county or city submits information on any permit changes or renewals 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 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.

(3) 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.

(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 licensed pest control operator, as defined in Section 11705 of the Food and Agricultural Code, who is primarily involved in agricultural pest control activities.

(5) Underground storage tanks containing hazardous wastes as defined in Section 25116 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.

(b) 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 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 of the secondary container or leak detection system of the primary container and would be required to meet the appropriate construction criteria.

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.

"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 on the Department of Health Services' comprehensive master list which includes:

1. 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 of the Health and Safety Code.
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.

"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 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 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 inspector" 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

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 monitoring standards of Section 2634 must also be used.

(c) All new tank systems must comply with Section 2635.

8/13/84

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 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 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.

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(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 required 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 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 materials shall be considered single walled and shall not be construed to fulfill the requirements of both primary and secondary containment.

(h) Double walled tanks which satisfy the requirements of Sections 2631(b) and (c) shall be considered to fulfill the volumetric requirements for secondary 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 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 thickness to withstand all anticipated applied stresses with 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.

(e) The sump shall be monitored with a continuous sensor, which is removable on a semi-annual basis for calibration and maintenance if needed. 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 specified 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 containment; or

(2) Detecting within the sump 0.5 inches of the hazardous 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).

3. Construction Standards for New Motor Vehicle Fuel 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 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 2631(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 2631(b) shall be subject to the requirements of Section 2631.

(d) The secondary container shall be demonstrated to achieve the integrity and compatibility criteria of Section 2631(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 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 and 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.

(f) 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 unless it provides at least 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:

(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 tank 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 on-line pressure loss detector and flow reduction device. The detector 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 leakage of any hazardous substance to areas outside of the secondary containment; and

(6) Extended to the ground surface and covered with a locked water-proof cap.

(c) Monitoring of each casing described in Section 2634(b) shall utilize a continuous sensor which is removable on a semi-annual basis for calibration and maintenance, if needed, and capable of detecting within the casing 0.5 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 (e) 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.

(e) If inventory controls indicate a gain or loss of hazardous 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 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 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 tank may continue throughout the steps provided that the steps are compl within the specified time periods and any loss or gain does not exceed two times the levels specified in subsection (d) of this section. Inven tory control and daily reconciliation shall continue throughout imple- mentation of the steps.

(1) The operator shall notify the owner verbally or in writing of the r that inventory controls indicate a gain or loss of hazardous substa or water within 24 hours of the completion of the daily reconcilia- tion which indicates the loss or gain.

(2) The operator shall review the inventory records within two (2) hou to determine if an error exists which would cause the gain or loss to be less than that specified in subsection (d) of this section.

(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 be completed within 24 hours o 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 (e) (3).

(5) All dispenser meters associated with hazardous 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 "Underground Leakage of Flammable and Combustible Liquids", 1983 (NFPA 329), within 24 hours of completion of sub- section (e) (5). This step may be completed after the step described in subsection (e) (7) if excavation is necessary 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 shall be completed within 24 hours of the completion of subsection (e) (7).

(7) The tank shall be tested using the tests described in Section 2642 of Article 4 within 48 hours of completion of subsection (e) (6).

(8) 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:

(1) The volume of the secondary container in relation to the volume of the primary container;

(2) The amount of time the secondary container 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 secondary container to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the secondary container 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 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 hydrostatically or with pressure in accordance with standards and procedures set forth in Article 4.

(4) Cathodically protected steel tanks and steel tanks clad with glass fibre reinforced plastic shall be fabricated and designed by the requirements in Underwriters Limited (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).

(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-S615-1977, 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 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.

(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 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.

(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 of hazardous substances from any part of the primary container to the monitoring location(s).

(11) 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. Manways shall be constructed as water-tight as practical. 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:

(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 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 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 final disposal. The liquid shall be sampled and analyzed immediately 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 manufacturer'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 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.

(g) The overflow protection system required in subsection (f) of this section shall be satisfied for underground storage tanks containing motor vehicle fuels 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 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, maintained, and monitored cathodic protection system with or without coatings, or

(2) Corrosion resistant materials of construction such as special alloys or fiberglass-reinforced plastic coatings.

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

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 Article 7 of this subchapter.

(b) The intent of monitoring 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 tanks 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 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 flooding or the presence of other liquids shall be utilized during those 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.

(e) 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 monitoring unless an alternative monitoring method is approved by the local agency which meets the intent of subsection (c) of this section. If an owner demonstrate to 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) and (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, remove 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 owners of underground 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 if they meet the exemption criteria contained in Section 2647 of this article.

(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.

(i) 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.

2641. 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 underground tank 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 to 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 met the owner is exempted from implementing visual monitoring:

(1) An owner may be exempted from visually 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 act of visually inspecting the entire exterior of the underground storage tank would put a person in a physically unsafe environment.

(3) If a person would be required to use personal protection equipment (other 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 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 exterior surfaces of a tank and the surface of the floor directly beneath the tank shall be monitored by direct viewing.

(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.

(3) 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 thereof being visually monitored.

(4) Recordation and reporting of 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 analysis of the observed liquid.

(2) Testing of the underground storage tank utilizing the procedures described in Section 2642 of this article.

(3) Removing all hazardous substances from the underground storage tank.

(e) Visual monitoring of the exposed portion of a partially concealed tank shall not relieve an owner from implementing monitoring for the

concealed portion of the tank using the other monitoring methods described in this article.

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 conditions described in subsection (c) of this section cannot be performed without significant excavation.

(c) Testing of underground storage tanks shall utilize a method 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, if applicable:

(1) 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 corrosion protection - test 10 years after installation, and yearly thereafter.

Category B: Corrosion resistant tanks[1] - 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.

[1] Common corrosion 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/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 pressurized 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).

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 susceptible to accepted technically available metering.

(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;

(2) 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 or 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 subsection (d) of this section:

(1) 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 lesser 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 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 be evaluated according to the methods and time schedules provided for in subsection (f) of Section 2644 of Article 3.

(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.

44. 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 existing underground storage tanks subject to this subchapter shall implement an evaluation as described in subsections (c) through (d) 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 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) Soil conditions prevent drilling by any generally existing technique.

(c) At least one slant 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 subsection (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 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 no greater than 5 feet beginning at the ground surface and proceeding to the target depth of the boring or to the ground water level in borings encountering ground water, whichever occurs first.

(2) The soil samples shall be collected, transported, stored, and analyzed according to approved EPA methods.

(3) Analysis of the individual soil samples shall be as follows:

(A) If more than one boring is utilized, then samples from the same depth from each boring may be composited if analytically possible without loss of constituents prior to analysis.

(B) Samples may be analyzed in any order of depth. 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

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

(i) The hazardous substance(s) will be assumed to originate from the underground storage tank and further detailed investigations would be needed to prove otherwise. The underground storage tank 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 can be issued.

(ii) Further investigation will be needed to determine the magnitude and extent of any soil or ground water contamination 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.

(C) 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 borings 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 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 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 hazardous 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 monitoring methods.

(4) Visual monitoring of the entire tank 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 backfill surrounding the tank if at all 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:

(1) Before any method of vapor monitoring 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.

(2) The depth at which each sensor is placed relative to the 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 leakage 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 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-pore liquid monitoring system.

(4) The proposed technique will be effective in providing early detection of tank leakage.

(h) Vadose zone monitoring shall be continuous where feasible and connected to an above-ground alarm 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 monitoring 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 has been implemented and ground water is and will remain at least 5 feet below the invert of the underground storage tank.

(3) The 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 those 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 Section 2647 during 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 shall be designed and constructed according to the following criteria:

(1) Three ground water monitoring wells shall be installed around the underground storage tank or facility at spacings of 120° of arc around the central point 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 perimeter of the facility.

(2) 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 gravel 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. Assurance Ground Water Monitoring

(a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided in subsection (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 exempted from implementing an assurance 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 water level possible during the life of the facility is at a depth greater than 200 feet.

(3) Proximity to physical obstacles prevents the positioning and operation of the drilling equipment within a horizontal distance of 500 feet of the tank or tank cluster perimeter.

(4) Soil conditions prevent drilling by any generally existing technique.

(c) Assurance 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 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 monitoring well shall 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 perforated from 10 feet above the highest anticipated ground water 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 documentation of the ground water elevation in all, but not less than three, existing wells within 500 feet of the facility or an exploratory boring constructed as follows:

(1) An exploratory boring shall be drilled in the anticipated down-gradient 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 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 boring shall be drilled to a minimum depth of 200 feet if 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 4-inch ID casing.

(B) 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 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 depth of 200 feet. The exploratory boring shall be backfilled and sealed with bentonite grout or slurry.

(e) Wells shall be sampled semi-annually at a minimum. 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 pH, 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 and their degradation or transformation products.

(g) Samples shall be collected, stored, transported, and analyzed according to approved EPA 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 donate, capture, nor mask product constituents for which analyses will be made.

(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, casing fittings, screens, gravel packs and all other components are to 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 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.

(h) All well 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 locking water tight cap.

(l) 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 affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on th 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 initial 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 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 unauthorized releases 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) Method 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 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 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.

(d) 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

(2) 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 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 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 causes 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 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 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 (c)(2), (c)(3) and (c)(4) of this section.

(e) The local agency shall review the permit whenever there has been an unauthorized release or 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 requirements specified by other laws and regulations.

g) The local agency, Regional Board, and Department of Health Services 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 to allow primary container repairs, to allow the use of interior coating 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 agency of the repair process.

(c) Section 2662 describes the required methodology which must be utilized in the interior coating repair process.

(d) Section 2663 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) describe 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 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 lining is the proposed 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 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 does not exist. If 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 minimize the corrosion and that the existing corrosion problem does not threaten 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 container has never been repaired using an interior lining.

2. 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 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 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.

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 Combustible Liquids Code adopted by the National Fire Protection Association on November 20, 1981 (NFPA 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 Piping or National Fire Protection Association Flammable and Combustible 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 these 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 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 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 intends 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 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 allow the underground storage tank to be capable of storing 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 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 with all of the following:

(1) All residual liquid, solids or sludges 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 hazardous waste.

(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 completely purged of the flammable vapors.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance.

(4) 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) 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 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 storage tank or if there has been a change in the quantity or type of liquid added pursuant to subsection (D)(4) of this section.

2672. Permanent Closure Requirements

(a) Underground storage tanks subject to permanent closure 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 stored for future use or handled as a hazardous waste

(B) hazardous waste - legally recycled or disposed of as a hazardous 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 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 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 inconsistent 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

(B) 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 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 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 cut or punctured 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, solids, or sludges 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 hazardous waste.

(2) All piping associated with the tank shall be removed, handled 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.

(3) Soils shall be analyzed for all constituents 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.

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 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 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 water of the state from an unauthorized release.

(5) 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 of $26,000.

(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 remand the application to the appropriate Regional Board if it determines that the application falls within Section 2682.

(f) The State Board shall hold at least two 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. 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 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 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 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 will adequately protect the soil and the beneficial 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 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) 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.

(k) 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.

(l) 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.

(m) 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 water of the state from an unauthorized release. The State Board will not modify or revoke a categorical 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.

582. 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 Quality 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 demonstrating 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 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 documents 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.

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 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 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 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.

(k) 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.

(l) 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 notify 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 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 unauthorized releases.

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

(4) A fee of $11,600.

(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 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 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 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 adequately 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 followed procedures comparable to those outlined herein for issuance of the authorization.

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

2710. 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 2711 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 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 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.

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 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, firm, 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.

(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) The underground 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, lining, wrapping, and cathodic 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 monitoring program, including, but not limited to the following where applicable:

(A) visual;

(B) tank testing or inspection procedures;

(C) inventory controls including 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 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.

(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 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 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 regulations.

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 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; 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 within the time frame specified in subsections 2652(b) and (c)).

(c) A permit to operate issued by the local agency shall be effective 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. 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 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. Those 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 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, as applicable of this subchapter and with all existing permit conditions. The inspection shall be conducted as specified in subsection (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 required corrections 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. 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 materials shall be filed with the local 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 (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 permit; 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 recommendations will not cause an unauthorized release.

2713. Annual Report

(a) The local agency shall notify the State Board of any changes in permits as defined in subsections (a) or (d), Section 2712 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 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 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 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 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) If 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 agency or the 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 trade secret is unclear, the local agency or 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 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 on this basis of the definition of "trade secrets" contained in Health and Safety Code Section 25285.6(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 or Regional 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.

(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 further information is in the confidential file.

(g) Information contained in confidential files shall only be disclosed to authorized 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's right to obtain prevention of disclosure of information 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

UNDERGROUND TANK REGULATIONS

California Administrative Code
Title 23 Waters
Chapter 3 Water Resources Control Board
Subchapter 16 Underground Tank Regulations

TABLE OF CONTENTS

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 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 ~~except as provided in Section 2611(a) of this Article or Articles 8 and 9 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 the provisions of this subchapter within its boundaries.

(d) All owners of underground 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 6, the closure requirements of Article 7, and the permit application requirements of Article 10.

Authority: Health and Safety Code (H&SC) 25288.2

Reference: Health and Safety Code (H&SC) 25282, 25283, 25288, 25298.2

Adopt new section to read:

2011. 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) 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 25284.1 provided that:

(A) The ordinance, as it may be amended, continues to meet, at a minimum, the requirements of Article 3 and Article 4 of this subchapter or implements the requirements of Health and Safety Code Sections 25284 and 25284.1; and

(B) The county or city issues permits for underground tanks pursuant to the ordinance, and submits a copy of the permit application to the State Board as specified in Article 10 of this subchapter

(C) The county or city submits information on all unauthorized releases as specified in Article 5 of this subchapter;

(D) The county or city submits information on any permit changes or renewals 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 and subject to the supervision of the county agricultural commissioner if the county agricultural commissioner determines, by inspection prior to May, 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 required by Section 25284.1 of the Health and Safety Code if the tank was installed on or before June 30, 1984;

(3) 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 agricultural or the farm site.

(H) Underground storage tanks that are used for ignition 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 13705 of the Food and Agricultural Code, who is primarily involved in agricultural pest control activities.

(2) (5) 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.

(b) Structures such as sumps, separators, storm drains, catch basins, oil field gathering lines, refinery pipelines, lagoons, evaporation ponds, well cellars, separator 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 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

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
Local agency
Operator
Owner
Person
Pipe
Primary containment
Product-tight
Secondary containment
Single-walled
Special inspector

Storage/store
Unauthorized release
Underground storage tank

2621. 2620/ Additional Definitions

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

"Board" means the State Water Resources Control Board.

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

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

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

1. 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 of the Health and Safety Code.

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. This classification is contained in the Flammable and Combustible Liquids Code 1987 (NFPA 30).

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

"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 frabricated 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. Upon a highway, 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 subject to this Subchapter which is installed after the effective date of this Subchapter unless regulations 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 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 escape 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 is contained 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 walls.

"Special inspector" means a professional engineer, registered pursuant to Chapter 7 (commencing with Section 6700) of Div. 3 of the Business and Professions Code, who is qualified to assess, 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 10 50 percent of the surface area of the tank volume, that can be in contact with the stored material including connected piping, is below the ground surface.

"Tank" means any single container including connecting piping which is for used 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 that is used synonymously with "underground storage tanks"/

"Unauthorized release" means any release or emission of any hazardous substance unless that 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 intentional withdrawals of hazardous substances for the purpose of legitimate sale, or use, or disposal.

"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/

Authority/ HSC 25288/2

Reference/ HSC 25280/ 25281/ 25284

Article 3. New Tank Construction and Monitoring Standards

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 specify construction and monitoring standards for all new underground storage tanks. systems New underground storage tanks 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 monitoring standards of Section 2634 must also be used.

(c) All new underground storage tanks and secondary containment tank systems must comply with Section 2635.

Authority: H&SC 25288.2

Reference: H&SC 25280, 25284

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.

(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 product the hazardous substance stored within the primary container(s) for a period of at least the maximum anticipated time period sufficient to allow detection and recovery of the unauthorized release, of product from the primary container

(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 or closed as specified in Article 7 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) /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 20 percent of the aggregate internal volume of all primary containers in the secondary container, storage facility whichever is greater.

(f) /e/ If the secondary container storage facility is open to rainfall, then it the secondary container shall be able to accommodate the volume of the twenty-four (24) hour, one hundred (100) year storm in addition to that required in Subsection (e) /d/ and /e/ of this Section.

(g) /f/ The volumetric volume requirements for the pore space of a granular material placed in the a secondary container as part/any of the pore space in backfill for the placed around the primary container shall be equal to 120 percent of that required in Subsection 2[illegible]303.(e) of this Section. /d/ and /e/ 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) Secondary containers shall be equipped with a collection system capable of removing any precipitation, subsurface infiltration, or hazardous substance released from the primary container.

(i) The floor of the secondary container shall, if necessary for monitoring, be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow 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. If this access casing is within

a secured facility, the requirements for a locked cap may be waived. The casing shall be thick enough to withstand all anticipated applied stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored product nor donate, capture, or react product 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 0.67 ounces or less per square foot per 24 hours. Such permeability shall constitute the maximum rate of the transport of the hazardous substance proposed for storage over time. 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 Section 2631(c) if and 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.

(A) Volume swell: after a 24-hour period of immersion in the stored hazardous substance, the volume swell shall not exceed 3 percent of the original liner membrane material's thickness.

(B) Change in elongation: 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 plus or minus 2 percent of the original elongation.

(C) Brittleness: the liner membrane material Shore A hardness after 24 hours of immersion in the hazardous substance shall not change plus or minus 5 percent of the original hardness.

(D) Rate of transport: 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.

(E) Rate of solubility: the rate of solubility of

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

(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.

(k) The liner shall be installed under the supervision of a representative of the membrane liner fabricator, or a contractor certified by such fabricator.

(l) 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) (1) Semi-rigid, coated, or clad materials shall be constructed single walled and shall not be considered to fulfill the requirements of both primary and secondary containment.

(n) (1) Double-walled tanks which satisfy the construction standards requirements of Sections 25211(d) and (e) shall

be considered to fulfill the volumetric requirements for secondary containment specified in Section 25631(c)(7)(A).

(o) The design of double-walled tanks shall allow for monitoring of the annular space.

(p) "Sticking" the annular space of a double-walled tank as a monitoring method shall not be allowed unless a strike plate or other approved devices used to protect the tank are located directly under the monitoring opening.

(q) The double-walled tank shall be so designed and installed that any loss of hazardous substance from the primary container will drain to a central location within the annular space, to be detected by a monitoring device or method.

(r) Any special accessories, fittings, coating, or lining not inherent within the initial design of the primary container shall be approved by a nationally recognized, independent, testing organization, or a demonstration of integrity with the primary container shall be required by the local agency.

(s) All primary containers and double-walled tanks subject to flotation shall be weighted or anchored using

methods specified by the manufacturer or, if none exist, best engineering judgment.

Authority: [illegible]

Reference: [illegible]

Adopt new section to read:

§ 2636. 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) or one or more of the methods listed in Subsection (2).

(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 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 by the local agency. The inspection schedule shall be established such that inspections occur on a routine basis 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.

(C) Recordation of the liquid level in the 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; shall be intended to determine if the observed liquid constitutes an unauthorized release; and shall be included in the permit.

(i) Laboratory analysis of the observed liquid.

(ii) Testing of the underground storage tank utilizing the procedures described in Section 2643 of Article 4.

(iii) Removal of all hazardous substances from the underground storage tank and the secondary container (as specified in Subsection (D) of this Section).

(E) A program which relies on detecting the hazardous 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

Methods of Monitoring Hazardous Substances in the Secondary Containment

Condition of the Secondary System (1)	Type of Substance Stored	Method of Monitoring: Liquid Level Indicator (2)	Hazardous Substance Sensor (3)	Vapor Monitor	Pressure or Vacuum Loss Detector (4)
Dry	Volatile		X	X	X
Dry	Nonvolatile		X		X
Wet	Volatile		X	X	X
Wet	Nonvolatile		X		X

(1) A "dry" system does not normally contain liquid within the secondary container during normal operational 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 "wet" systems.

(3) Includes either qualitative or quantitative determinations of the presence of the hazardous substance.

(4) Primarily used for double-walled tanks to detect changes in pressure or vacuum between primary and secondary container. The use of pressure or vacuum must be accepted as part of the primary and secondary container approval by a nationally tested organization.

requirements shall apply when appropriate.

(A) Continuous monitoring device shall be connected to an audio/visual alarm system.

(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.

(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:

(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.

(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 on-site, and an equipment maintenance schedule for that located on-site.

(B) The name(s) or title(s) of the person(s) responsible for authorizing the work to be performed.

(c) Secondary containment shall be provided with a collection system capable of removing any hazardous substance, including rainwater, in accordance with the following requirements and limits for secondary containment:

(1) The floor of the secondary containment shall be constructed of a firm, unyielding base of material which is impervious to the hazardous substance. The floor and the access ramp shall be sloped to a collection point of the collected liquid. The access ramp shall be extended to the floor surface and perforated at the point of the sump and covered with a locked watertight cap.

(2) The casing shall be of solid material to withstand all anticipated applied stresses with a five safety factor and constructed of materials that will not be structurally weakened by the stored hazardous substance or other products contained for a time greater than will be needed.

(3) The sump shall be monitored with a continuous sensor which is removable by a qualified person for calibration and maintenance if needed. The continuous sensor shall be capable of alerting

(4) Determine within one year after the effective

~~liquid and activating a mechanical/electrical/~~

~~above ground alarm system when any concentration of a hazardous substance or vapor is present. All electronic liquid sensors in tanks shall be individually serviced and evaluated within a time specified by the local agency or upon detection. Tanks to detect/have the presence of hazardous substance/ This system cannot be used when water is normally expected to be present within the secondary containment or~~

~~(2) Detecting within the same 672 hours of the hazardous substance stored by the primary containment, and activating a mechanical/ located/ aboveground alarm system/~~

~~(f) The secondary system cannot be used for a double walled tank and may be supported continuously using a pressure sensor/ The sensing devices shall be capable of activating a mechanical located aboveground alarm system/ Double-walled tanks which utilize this leak detection system are exempt from the requirements of Section 2632(c) (2)/~~

Authority: H&SC 25288.2

References: H&SC 25280, 25284

Adopt new section to read:

2633. Construction Standards for new Motor Vehicle Fuel 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 construction standards specified in Section 2632 shall be used in lieu of those specified in Section 2631.

(b) Primary containers used for the underground storage of motor vehicle fuel and constructed under this section shall consist of double-walled tanks constructed 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 containment system described in Section 2633(d) through (f). and (g)

(c) Primary containers used for the underground storage of motor vehicle fuel and constructed of materials other than those specified in Section 2633(b) shall be subject to the requirements of Sections 2631 and 2632.

(d) The permit applicant secondary container shall be

demonstrate to the satisfaction of the local agency that the leak interception and detection system achieves the integrity and compatibility 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 Section 2631(c) if, and only if, the liner material meets the following standards:

(1) The membrane liner material shall have the permeability factors specified in Section 2631(j)(1) as tested against ASTM Reference Fuel B.

(2) The membrane liner material shall be suitable for containment of the motor vehiclefuel in that such material shall meet the criteria set forth in Section 2631(j)(2)(A) through (E) as tested against ASTM Reference Fuel B.

(3) The membrane liner shall meet the requirements set forth in Section 2631(j)(3).

(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) (1) The leak interception and detection system (secondary container) and the response plan must preclude the escape of any leaked hazardous substance with ground water. At a minimum the leak interception and detection system shall be above the highest perennial encountered ground water elevation. Proof that the leak interception and detection system (secondary container) and response plan will protect ground water must be demonstrated by the permit applicant to the satisfaction of the local agency. The demonstration shall, at a minimum, consider the following:

(A) The containment volume of the leak interception and detection systems (secondary container)

(B) The maximum leak which could go undetected under the inventory reconciliation method presented in Subsection (a)(2) of 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 systems;

(4) (2) The depth from the bottom of the leak interception and detection system secondary container to the highest anticipated level of ground water;

(5) (3) The nature of the unsaturated soils under the leak interception and detection system secondary container and their ability to adsorb contaminants or allow vertical movement of contaminants;

(6) (4) 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 systems; and

(7) (5) The nature and timing of the response plan to clean up the hazardous substances which have been discharged from the primary container.

(g) (1) Pressurized piping systems that include an automatic, on-line continuously operating pressure loss

detector and flow restriction device and suction piping systems are exempt from the leak interception and detection secondary container requirements of Sections 2634 and 2633 of this Article. The activated leak detector shall be connected to a visual or audible alarm system unless it provides at least a 3% gph reduction from normal flow rates. Suction piping systems shall be evaluated at least once each day of operation to detect if a leak in the piping system exists.

Authority: H&SC 25288.2

Reference: H&SC 25280, 25284

Adopt new section to read:

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 leak interception and detection ~~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 2644~~ 2642 of Article 4.

(3) Hydrostatic testing of the tank every two years according to the criteria specified in Section ~~2643~~ 2642 of Article 4, 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 unless it provides for at least a 50 percent reduction from normal flow rates.

(b) The floor of the leak interception and detection system shall be constructed on a firm base and sloped to a specific location or collection sump.

(c) ~~(1)~~ An Access casing(s) shall be installed to intercept the collection sump or specific location of each ~~monitoring location~~. The 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 container~~ to enter the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering with a safety factor(s) of ~~1/3~~;

(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 container and the leak interception and

detection system; secondary container

(5) Capable of preventing leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system; secondary container and

(6) Extended to the ground surface and covered with a locked watertight 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 audial/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, the accuracy of the proposed

monitoring method, and the maximum leak which could go undetected under the inventory reconciliation method presented in Subsection (e). 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.

(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) Monitoring of each system described in Section 2626(b)

small device a conditions sensor which is capable of a reasonable level for calibration and maintenance if needed, and capable of detecting within the range specified by the manufacturer substances stored in the primary containment and secondary containment if released into the secondary leak system.

(e) (d) An underground tank used for the storage of motor vehicle fuels that has a loss or gain of hazardous substance or mixture as determined by daily gauging and seven day reconciliation controlling requires i. Subsection (a) (c) of this section) of greater than any of the following shall be tested according to the procedures specified in subsection (e) of this section:

(1) Daily loss or gain of 100 50 gallons, or

(2) Seven [7] day loss or gain of five percent of the underground storage tank throughput volume of hazardous substance delivered over the seven days or 100 gallons, whichever is greater, but not greater than 350 gallons, or

(3) Cumulative /calculated over a period of at least thirty 30 days loss or gain of one-half percent of the underground storage tank throughput volume of hazardous substance throughput over the period

that the cumulative loss or gain is calculated or 100 gallons, whichever is greater.

(f) (e) If inventory reconciliation controls indicates a gain or loss at the detection threshold specified in subsection (e) (d) of this section, then the following steps shall be implemented at 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 2 of this subchapter shall be followed.

If completion of the steps described in Subsection (2), (3), or (5) of this Subsection indicate inventory reconciliation errors that, when corrected cause the levels in Subsection (e) (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 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 during implementation of the steps provided that the steps are completed within the specified time periods and any loss

or gain do not exceed two times the levels specified in Subsection (e) /d/ of this section. Inventory control and daily reconciliation shall continue during ~~x/xxxxx/x/~~ implementation of the steps.

(1) The operator shall notify the owner /e/ daily or in writing of the fact that inventory reconciliation ~~x/xx/xx~~ indicate a gain or loss of hazardous substances 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) hours to determine if an error exists which would cause the gain or loss to be less than that specified in Subsection (e) /d/ of this section.

(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 be completed within 24 hours of the conclusion of Subsection (f) /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 (f) /e/ (3).

(5) All dispenser meters associated with hazardous substance withdrawal shall be checked for calibration within 24 hours of completion of Subsection (f) /e/ (4).

(6) All piping shall be tested using the methods specified in Sections 4~~2~~.6 or 4~~2~~.7 of the National Fire Protection Association (NFPA) publication entitled "Storage of Flammable and Combustible Liquids", 1~~9~~83 (NFPA 329), within 24 hours of completion of Subsection (f) /e/ (5). This step may be completed after the step described in Subsection (f) /e/ (7) if excavation is necessary to perform the tests and if the step described in Subsection (f) /e/ (7) is completed within 48 hours of the completion of Subsection (f) /e/ (5). If this occurs, then this Subsection shall be completed within 24 hours of the completion of Subsection (f)/e/ (7).

(7) The tank shall be tested using the tests described in Section 2~~6~~43 2~~6~~44 of Article ~ within 48 hours of completion of Subsection (f) /e/ (6).

(8) Additional tests or investigations as required by

the local region.

(g) (7) A response plan for an unmonitored release shall be developed prior to installation for any leak detection system (existing) which does not meet the monitoring requirements of 9.6.6.6.2.6(e) and (f) (7) and (8) of this Article. The response plan shall consider the following:

(1) The volume of the leak interception and detection system secondary container in relation to the volume of the primary container;

(2) The amount of time the leak interception and detection system secondary container 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 secondary container to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the leak interception and detection system secondary container and the likely ability to absorb contaminants or allow vertical movement of contaminants; and

(5) The methods and schedule for removal of the leaked 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 secondary container; and

Authority: NSC 95-6.2

Reference: NSC 20.84, 6.5.2.6

Adopt new section to read:

§6[illegible]. General Construction Standards

(a) The following sections shall apply to all primary and secondary containers including leak interception and detection systems.

(b) Primary containers and double-walled tanks shall be designed and constructed to comply with all of the following:

(1) Cathodically protected steel tanks, steel tanks 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.

(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.

(3) [illegible] A 6/22-inch gauge steel [illegible] plate) shall be centered under all accessible openings of the underground storage tanks. 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 the tank and bonded or seam welded in place, and have a minimum area equal to the opening or a guide tube, whichever is smaller.

(4) Single-wall primary containers of steel and the outer surface of double-walled tanks constructed of steel shall be protected by either a properly installed, maintained, and monitored cathodic protection system with or without coatings or

listed corrosion resistant materials, non-metallic reinforced plastic coatings, composites, or equivalent systems, which have been checked using electrical holiday testing. 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 history of the area.

When cathodic protection is selected, the system shall be designed by a registered corrosion engineer or a NACE corrosion specialist or in accordance with the certification listing, whichever is applicable. The cathodic protection system shall be initially tested by a registered corrosion engineer or NACE corrosion specialist.

Monitoring of the cathodic protection system shall be done 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.

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

(5) All primary containers and double-walled tanks shall be installed according to the manufacturer's written recommendations or, if no written recommendations exist, best engineering practice.

(6) (2) All underground 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, Incorporated, (UL) or any other nationally recognized independent testing organization shall be evidence of compliance with this requirement, guaranteed by the manufacturer to be provided prior to leaving the factory.

(7) (3) Before being covered, enclosed, or placed in use, fiberglass reinforced plastic all underground storage tanks and piping shall be tested for tightness either hydrostatically or with air pressure at not less than 3 lbs. per square inch (20.68 k Pa) and not more than 5 lbs. per square inch (34.48 k Pa). Pressure piping shall be tested according to the requirements specified in Section 3-7.1 of NFPA 30.

"Flammable and Combustible Liquids Code". Double-walled tanks are exempt from the requirements of this section provided that the annular space is monitored using either pressure or vacuum testing, in accordance with standards and procedures set forth in Article 4

(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 level sensing device that continuously monitors and indicates the liquid level in the tank and either (B) or (C) or both.

(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.

(D) A spill catchment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface

environment.

(9) The overflow protection system required in Subsection (b)(8) of this Section shall be satisfied for underground storage tanks containing motor vehicle fuels in which:

(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, or

(B) The available capacity of the 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 200 gallons, whichever is less, as determined by tank gauging, or

(C) The hazardous substance being delivered can be metered into the tank and the available tank capacity is determined immediately prior to filling.

(D) A spill catchment basin surrounds the fill pipe and prevents the inflow of the motor vehicle fuel into the subsurface environment.

(a) Cathodically protected steel tanks and steel tanks with fiberglass reinforced plastic shells or fiberglass reinforced plastic tanks shall be fabricated and designed in accordance with Underwriters Laboratories Inc. (UL) Standard 1746 "Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks" or Underwriters Laboratories of Canada (ULC) Standard CAN4-S603-M83 "Standard for Steel Underground Tanks for Flammable and Combustible Liquids" and shall be installed in accordance with National Fire Protection Association (NFPA) 30 "Flammable and Combustible Liquids Code" (1987) and Section 7116 of Division 7 of Title 23 of the California Administrative Code (CAC) and Uniform Fire Code (1988) and shall be protected from corrosion in at least 2 equivalent ways.

(b) Fiberglass reinforced plastic tanks shall be listed and fabricated in accordance with Standard 1316 "Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum" (UL 1316) or Underwriters Laboratories of Canada Standard CAN4-S615-M83 "Standard for Reinforced Plastic Underground Tanks for Petroleum Products" (ULC S615-83).

(c) Fiberglass reinforced plastic tanks shall be designed based on tests by the manufacturer for strength, and chemical compatibility with the materials authorized to be stored using applicable sections of American Society for Testing and Materials (ASTM) Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Storage Tanks" (ASTM D3299) and the manufacturer shall provide the owner with written assurance of the compatibility.

(c) Secondary containers including leak interception and detection systems 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 beyond the vertical planes an additional distance foot.

(2) (1) 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) (B) 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 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).

(5) 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.

(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 appropriate method for final disposal. The liquid shall be sampled and analyzed immediately upon an indication of an unauthorized release from the primary container.

(7) For primary container installed completely beneath the ground surface, the original excavation for the secondary container shall have a watertight 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. Manways shall be constructed as watertight as practical. Double-walled tanks and open vaults are exempt from the requirements of this subsection.

(8) 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.

(9) The secondary container shall be tested for tightness after installation. If backfill is placed between containment and the primary container, the test shall be conducted before backfill is placed. All

(1) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been imported in contravention of section 3.41 shall be guilty of an offence.

(2) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been exported in contravention of section 3.41 shall be guilty of an offence.

(3) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been imported in contravention of section 3.41 shall be guilty of an offence.

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(10) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been exported in contravention of section 3.41 shall be guilty of an offence.

(11) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been imported in contravention of section 3.41 shall be guilty of an offence.

(12) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been exported in contravention of section 3.41 shall be guilty of an offence.

(13) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been imported in contravention of section 3.41 shall be guilty of an offence.

(14) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been exported in contravention of section 3.41 shall be guilty of an offence.

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(16) Any person who, without the consent of the Minister, has in his possession any goods which he knows or has reasonable cause to believe to be goods which have been exported in contravention of section 3.41 shall be guilty of an offence.

[127] and the determination made thereby shall be binding upon the parties hereto, subject only to such rights of appeal as may be provided by law. Any such arbitration shall be conducted in accordance with the rules of the American Arbitration Association then in effect, unless the parties hereto agree otherwise. Judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

[128] Notices. Any notice, demand or request which may be given to or made upon either party hereto under the terms of this Agreement must be in writing and shall be deemed given and effective upon the earlier of (i) actual receipt by the party to which such notice is directed, or (ii) the second business day after mailing by registered or certified mail, postage prepaid, return receipt requested, addressed to such party at its address set forth below, or to such other address as such party may hereafter specify by notice to the other party hereto:

[129] If to Purchaser:

[130] If to Seller:

[131] Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, without regard to its conflict of laws principles.

[132] Entire Agreement. This Agreement, together with the Exhibits and Schedules hereto, constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior negotiations, understandings and agreements, whether oral or written, relating thereto.

[133] Amendment. This Agreement may be amended only by a written instrument executed by both parties hereto.

[134] Waiver. No waiver of any provision of this Agreement shall be deemed a waiver of any other provision, nor shall any waiver constitute a continuing waiver unless expressly so stated.

[135] Assignment. Neither party may assign its rights or delegate its obligations under this Agreement without the prior written consent of the other party, except that Purchaser may assign its rights to any affiliate of Purchaser.

[136] Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[137] Severability. If any provision of this Agreement is held invalid or unenforceable, the remaining provisions shall continue in full force and effect.

[138] Headings. The headings in this Agreement are for convenience only and shall not affect its interpretation.

[139] Time of Essence. Time is of the essence with respect to all dates and deadlines in this Agreement.

[140] Survival. The representations, warranties, covenants and indemnities of the parties shall survive the Closing for a period of twelve (12) months, except that the representations and warranties relating to environmental matters shall survive for a period of three (3) years.

[141] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[142] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[143] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[144] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

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[146] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[147] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[148] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[149] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

[150] Boilerplate. Boilerplate provisions shall be construed in accordance with their plain meaning.

Authority: H&SC 25288.2

Reference: H&SC 25280, 25288

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, pursuant to the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code, a visual monitoring or monitoring alternative 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: determining the containment ability of the underground storage tank; detecting ~~leaks~~ and ~~discharge~~ ~~releases~~ any unauthorized release that may occur in the future; and, in certain situations, determining if hazardous substances are present in the area around the underground storage tank. ~~be capable of detecting the~~ ~~ground water quality directly~~ 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 determine if unauthorized releases are occurring ~~or have occurred in the past~~ and to detect unauthorized releases that occur in the future before ground water is affected. ~~and to~~ ~~directly measure the quality of the ground water underlying the tank. Therefore, applicable monitoring~~ ~~systems, as described in Sections 2641 through 2647,~~ ~~shall be implemented where reasonably feasible to~~ ~~existing tanks that do not have a secondary containment~~ ~~that meets the requirements of Article 7.~~

~~(c) The initial monitoring of all existing underground~~ ~~storage tanks shall, if feasible, be capable of~~ ~~determining if any of the underground storage tank~~ ~~has released in an unauthorized fashion. The soil~~ ~~sampling described in Section 2644 of this Article shall~~ ~~be the method to meet this interest. Other methods which~~ ~~achieve this interest may be approved by a local agency.~~

(c) ~~(d)~~ All owners of existing underground storage tanks subject to this Subchapter shall implement visual monitoring as described in Section 2642 ~~2644~~ 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 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 and is found to be effective for that portion of other methods shall be utilized during those portions of the year when feasible. If no other visual monitoring cannot be is implemented for the entire underground storage tank throughout the entire year then a other forms of monitoring alternative specified in Section 2641 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) (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 2642 of this Article shall implement a monitoring alternative which eliminates monitoring method as specified in Section 2641 2642 through 2648 of this Article. Unless monitoring specified in Section 2642 of this Article shall not be exempted based on the ability to implement visual monitoring unless an alternative monitoring method is approved by the local agency which the requirements of subsection (d) of this section. If an owner demonstrates to the local agency that the exemption should apply, the owner shall be relieved of the obligation to implement monitoring.

(e) The 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 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.

(f) Additional monitoring methods that are equivalent to or better than those specified in this Article may be approved by a local agency pursuant to the issuance of exemptions (d) and (e) of this Section. Requests for the use of additional monitoring methods shall be submitted to the appropriate sections of Article 31. Those additional methods may upon the discretion of the local agency require the submittal of additional information by or all of the alternatives specified in Sections 2642 through 2648 proposed that all monitoring objectives can be achieved

~~with the additional methods:~~

~~(g) All owners of underground storage tanks shall, if feasible, install an assurance monitoring system which monitors ground water between the underground storage tank. Underground storage tank owners are exempt from this requirement if they meet the exemption criteria contained in Section 2643 of this article.~~

~~(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.~~

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

Authority: H&SC 25288.2

Reference: H&SC 25282, 25284, 25284.1

Adopt new section to read:

2642. 2641 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 underground tank 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 to 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 met the owner is exempted from implementing visual monitoring for that portion to the tank which the condition applies.

(1) An owner may be exempted from visually 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 act of visually inspecting the exterior of

the underground storage tank would put a person in a physically unsafe environment.

(3) If a person would be required to use personal protection equipment (other than normal protective equipment, such as steel-toed shoes, hard hat, 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 staffed on a daily basis.

(c) A visual monitoring program shall incorporate all of the following:

(1) Provisions that all accessible exterior surfaces of a tank and the surface of the floor directly beneath the 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.

(3) Visual inspections shall be performed daily at a minimum, and shall be more frequent if necessary. The inspection schedule shall be established such that inspections occur on a routine basis AT 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 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 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 liquid.

(2) Testing of the underground storage tank utilizing the procedures described in Section 2643 2642 of this Article.

(3) Removing all hazardous substances from the underground storage tank.

(e) Visual monitoring of the exposed portion of a partially concealed tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank using a ~~the other~~ monitoring alternative specified ~~methods described~~ in Section 2641 this Article.

Authority: H&SC 25288.2

Reference: H&SC 25284.1, 25284.2

Adopt new section to read

2643. 2642 Underground Storage Tank Testing

(a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this Article which specifies tank testing ~~subject to this subchapter shall,~~ except as provided in subsection (b) of this section implement a testing program pursuant to Subsections (b) (c) through (i) (j) 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 in implemented;~~

~~(2) If any test which does the conditions described in subsection (c) of this section cannot be performed within specified timeframes;~~

(b) (c) Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance ~~less~~ of at a rate of ~~less~~ 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 pockets,

(2) thermal expansion or contraction of the hazardous substance, which include any density considerations,

(3) temperature stratification in the tank,

(4) evaporation,

(5) pressure variations in the tank, and

(6) deflection of the 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 between 35 and 50 psi (2600 mm Hg). A pressure drop of more than 5 psi (260 mm Hg) per minute indicates 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. 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.

(d) Underground storage tanks shall be tested according to the following schedule:

Category A: Uncoated steel tanks without corrosion protection - within one year of permit issuance and yearly beginning ten (10) years after tank installation;

Category B: Corrosion resistant tanks (1) 2 - within one year of permit issuance and yearly beginning fifteen (15) years after tank installation;

(3) Cathodic corrosion resistant tanks (steel, fiberglass reinforced plastic (FRP), cathodically

pressurized steel, and FRP-lined 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 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.

(f) 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, other than those required by this Article, performed on the underground storage tank at any other 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 subsection (e)(3) above

(h) Underground storage tanks or pipelines containing flammable or combustible liquids shall not be pressure tested using air or other gases.

(h) All pressurized 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 flow to no more than 50 percent of the minimum flow under non pressure loss simulations (i.e., normal operations).

Authority: H&SC 25288.2

Reference: H&SC 25284, 25284.1, 25284.2

Adopt new section to read:

2641. Monitoring Alternatives

(a) All owners of existing 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, within the time allowed, one of the monitoring alternatives specified in Subsection (e) of this Section.

(b) The local agency shall review the monitoring alternative proposed based on the specification in Subsection (d) of this Section and shall approve the monitoring alternative if they 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 submittal of another proposed monitoring alternative or may specify the implementation of a monitoring alternative.

(c) The optional monitoring alternatives are as follows:

(1) Underground Storage Tank Testing

(A) 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 at the time the boring(s) and well(s) are installed.

(B) The vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Section 2646 and 2648 of this Article. Vadose zone monitoring shall be performed either continuously or daily.

(C) Ground water monitoring wells shall be 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 for alternative

TABLE 4.1 MONITORING ALTERNATIVES*

ALTERNATIVE	METHOD	MINIMUM MONITORING FREQUENCY	REFERENCE SECTION	COMMENTS AND CONDITIONS PROHIBITING USE OF ALTERNATIVE*
1	Tank Testing	Monthly	Section 2643	None
2	Vapor or Other Vadose Zone Monitoring Method and	Daily	Section 2646	1. Must be able to do both vadose and ground water monitoring. 2. Ground water should normally be less than 100 feet deep to use this alternative. 3. Minimum number of ground water monitoring wells a. Ground water equal to or less than 50 feet deep. o Single tank (<1,000 gal) - one downgradient well. o Single tank (>1,000 gal) - two wells, one of which shall be downgradient. o Three tanks (same excavation) -one well per tank equally spaced, at least one of which shall be downgradient. o Four or more tanks (same excavation) or tank(s) in closely spaced excavations - four wells, at least two of which shall be downgradient and the remainder equally spaced. o Pipelines - additional wells 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 unformly spaced. o Pipelines - additional wells as determined by the local agency.
	Ground Water and	Semi-annual	Section 2647	
	Soils	One-Time	Section 2645	
3	Vadose and Soils and Tank Testing	Daily	Section 2646	This alternative shall not be used when first ground water is less than 100 feet deep and: 1. First ground water has actual or potential beneficial uses (municipal, domestic, industrial, or agricultural supply, or 2. First ground water is hydraulically connected to ground water which has or potentially has beneficial uses.
		One-Time	Section 2645	
		Annual	Section 2643	
4	Ground Water and Soils	Weekly	Section 2647	1. Use of this alternative shall be limited to the following situations: a. Perennial ground water is normally less than 30 feet deep, and b. The ground water being monitored does not have any actual or potential beneficial use, 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 screened 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.
		One-Time	Section 2645	

TABLE 4.1 MONITORING ALTERNATIVES*

ALTERNATIVE	METHOD	MINIMUM MONITORING FREQUENCY	REFERENCE SECTION	COMMENTS AND CONDITIONS PROHIBITING USE OF ALTERNATIVE*
5	Inventory Reconciliation and	Daily	Section 2644	1. Must use approved meters for tank inputs and withdrawals. 2. Inventory reconciliation which exceeds an allowable measurement error plus 0.15 percent of throughput at any time during a 30-day period shall require further investigation: Tank Size — Allowable Measurement Error <4000 — 75 gallons 4000 to <8000 — 50 gallons 8000 to <12,000 — 75 gallons >12,000 — 100 gallons 3. Limited to motor vehicle fuels storage tanks.
	Tank Testing and	Annually	Section 2643	
	Pipeline Leak Detectors	Continuous		
6	Inventory Reconciliation and	Daily	Section 2644	1. Must use approved meters for tank inputs and withdrawals. 2. Inventory reconciliation which exceeds any of the following shall require further investigation a. Daily variation - 130 gallons b. Weekly variation - 1% percent of throughput but no greater than 350 gallons c. Monthly variation - 0.5 percent of throughput no less than 130 gallons 3. Minimum number of ground water wells - See Alternative No. 2. 4. Limited to motor vehicle fuels storage tanks.
	Tank Testing and	Annual	Section 2643	
	Pipeline Leak Detectors and	Continuous		
	Vadose Monitoring or	Variable	Section 2646	
	Ground Water Monitoring	Variable	Section 2647	
7	Tank Gauging and	Weekly	Section 2644	This alternative is limited to use on small tanks that normally do not have any input or withdrawals (e.g., standby generator fuel supply) or where the liquid level in the tank can be measured to the accuracy of 1/8 gallons. 1. This is an interim monitoring alternative that can be implemented for up to three years. 2. Inventory reconciliation shall utilize approved meters for inputs and withdrawals and shall maintain variations within the limits specified in Alternative No. 6. 3. Tank gauging is 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.
	Tank Testing	Annually	Section 2643	
8	Tank Testing and Inventory Reconciliation or	Annually	Section 2643	
		Daily	Section 2644	
	Tank Gauging	Daily or Weekly	Section 2644	

* 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.

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 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) Vadose Zone Monitoring, Soil Sampling and Underground Storage Tank Testing

(A) This monitoring alternative shall at a minimum include vadose zone monitoring and soil sampling at the time the boring(s) are installed. This alternative shall not be approved if first perennial ground water, including 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 water which has actual or potential beneficial uses.

(B) The determination of first ground water shall 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 nearby wells or borings that first ground water is significantly deeper than 100 feet.

(C) Vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Section 2646 and 2648 of this Article. Vadose zone monitoring shall be performed either continuously or daily.

(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 soils sampling and analysis at the time of

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

(i) Perennial ground water is normally greater than 30 feet deep; or

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

(iii) The ground water monitoring well cannot be screened within the interval 10 feet above the highest perennial ground water to 20 feet below the lowest perennial 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 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.

(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 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.

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

(ii) If the calculated variation is based on the previous day's physically measured inventory, the sum of the daily variations (considering positive and negative values) shall not exceed the allowable variation.

(iii) If the calculated variation is based on the previous day's calculated inventory, then the daily variation shall not exceed the allowable variation. The calculated inventory on any given 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.

(iv) The throughput error shall be measured throughput during the period under consideration times .15 percent (.0015).

(v) The allowable variation shall be the sum of the measurement error from Table 4.2 and the throughput error calculated in accordance with Subsection (iv) of this Subsection.

Table 4.2

Tank Size*	Allowable Measurement Error*
<4000	25
4000 to <8000	20
8000 to <12000	75
>12000	100

* all values in gallons

(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 a visual or 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) 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 shall be included and soil sampling at the time of borings or well installation.

(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 Section 2634 of

Article 3 within the times specified.

(i) daily variation ± 100 gallons

(ii) 7-day variation ± 5% of throughput or 100 gallons whichever is greater but, in no case greater than 350 gallons

(iii) greater than 30-day variation ± 2.5% of throughput or 100 gallons whichever is greater

(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 and suction pipelines shall be monitored as provided for in Subsection (d) of Subsection (5) 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 based on the number and proximity of monitoring locations to the underground storage tank and type of sampling and analysis; however, in no case shall monitoring be less frequent than semi-annually.

(F) Ground water monitoring, if used, shall be 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. 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

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for tanks which do not normally have frequent inputs or withdrawals and where the liquid level in the tank can be measured to an accuracy of ± 5 gallons or less when the liquid is at the most sensitive measuring level in the underground storage tank.

(B) The underground storage tank gauging shall be performed according to the following specifications:

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals; and

(ii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods, each lasting at least 5 days. No input or withdrawals shall occur during these periods. The liquid level measurement at the

of this Article according to the following:

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

(2) In cases where the underground storage tank is in a recharge area and the ground water 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. Furthermore, ground water monitoring shall be implemented in these situations if ground water is less than 700 feet deep.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Accept new section to read:

2642. 2641 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 underground tank 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 to 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 met the owner is exempted from implementing visual monitoring for that portion to the tank which the condition applies.

(1) An owner may be exempted from visually monitoring any portion of an underground storage tank that is in contact with the ground, surfaced 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

beginning and end of each period shall be performed by the same person.

(iii) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this Article.

(8) Interim Alternate Monitoring

(A) This alternative monitoring method shall, at a minimum, utilize underground storage tank testing and either inventory reconciliation or tank gauging. This alternative shall only be used by any of the following categories of owners for a period of up to 3 years after the effective date of these regulations.

(i) Small businesses as defined in Subsection 11342(e) of the Government Code, non-profit organizations which would meet the criteria for a small business, provided the owner of the small business demonstrates to the local agency that sufficient funds will be available to properly close the underground storage tank pursuant to this Article or to implement one of the first 7 monitoring

alternatives within the three year period; or

(ii) Any underground storage tank owner who 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 3 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 shall not issue a permit allowing this monitoring alternative for longer than three years and shall not renew the permit.

(iii) Any governmental agency that demonstrates to the local agency that, due to budgetary constraints the governmental agency needs additional 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 put a person in a physically unsafe environment.

(3) If a person would be required to use personal protection equipment (other than normal protective equipment, such as steel-toed shoes, hard hats, 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 staffed on a daily basis.

(c) A visual monitoring program shall incorporate all of the following:

(1) Provisions that all accessible exterior surfaces of a tank and the surface of the floor directly beneath the 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 observations 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 daily at a minimum, and shall be more frequent if necessary. The inspection schedule shall be established such that inspections occur on a routine basis or least one inspection shall be performed when the visual 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 or portion thereof being visually monitored.

(4) 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.

(2) Laboratory or field analysis of the observed liquid.

(3) Testing of the underground storage tank utilizing the procedures described in Section 2643 2642 of this Article.

(4) Removing all hazardous substances from the underground storage tank.

(e) Visual monitoring of the exposed portion of a partially concealed tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank using a the other monitoring alternative specified methods described in Section 2641 this Article.

Authority: H&SC 25288.2

Reference: H&SC 25284.1, 25284.2

Adopt new section to read

2643. 2642 Underground Storage Tank Testing

(a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this Article which specifies tank testing pursuant to this subchapter shall [illegible] in accordance with (b) of this section implement a testing program pursuant to Subsections (b) (2) through (f) (6) 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 2642 of this Article is implemented;

(2) If any test which meets the conditions described by subsection (b) (2) of this section cannot be performed during scheduled inventory reconciliation.

(b) (2) Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance [illegible] if it is [illegible] at a rate of [illegible] 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 pockets;

(2) thermal expansion or contraction of the hazardous substance, which include any density considerations;

(3) temperature stratification in the tank;

(4) evaporation;

(5) pressure variations in the tank; and

(6) deflection of the 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 between 35 and 50 psi (2600 mm Hg). A pressure drop of more than 5 psi (260 mm Hg) per minute indicates 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. 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.

(e) Underground storage tanks shall be tested according to the following schedule:

Category A: Excluded steel tanks without corrosion protection & within one year of permit issuance and periodically thereafter not less than every five years after last tightness test.

Category B: Excluded steel tanks with corrosion protection & within 1 year of permit issuance and periodically thereafter not less than every five years after last tightness test.

All Common Corrosion Resistant Tanks include fiberglass reinforced plastic (FRP), cathodically

protected steel, and FRP tried steel tanks/

(e) Within ten 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 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.

(f) 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, other than those required by this Article, performed on the underground storage tank at any other 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 subsection (e)(3) above

(h) Underground storage tanks or pipelines containingflammable or combustible liquids shall not be pressure tested using air or other gases.

(i) All pressurized portions of an underground storage tank shall be monitored utilizing an annual pressure loss detector and flow restriction devices. The detector shall be connected to a visual or audible alarm system. The flow restriction device shall restrict the flow to no more than 50 percent of the minimum flow under non pressure loss circumstances (i.e., normal operations).

rity: HSC 25208.2

rence: H&SC 25284, 25284.1, 25284.2

Adopt new section to read:

2644. [illegible] Inventory Reconciliation [illegible]

(a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this Article which specifies inventory reconciliation [illegible] shall [illegible] implement an inventory reconciliation control program as described in subsections (b) [illegible] through (f) of this section. This requirement may be transferred to the operator pursuant to provisions of Section 25284.2 of the Health and Safety Code.

[illegible]

(b) [illegible] All tanks shall be individually monitored utilizing a daily inventory reconciliation [illegible] system that takes into account: daily tank quantity measurements for both tank contents and any water layer; and, daily [illegible] meter readings for tank input and withdrawals. [illegible]

[illegible] 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 be a person licensed by the County Department of Weights and Measures.

(c) For the purpose of this section, "daily" shall be defined as days during which inputs or withdrawals 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:

[illegible]

(1) [illegible] Performed during periods of no tank additions or withdrawals;

(2) [3] Performed by the tank owner, operator or other designated managerial personnel who have had appropriate training;

(3) [4] 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 lowest end of the tank, if possible;

(5) [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

(6) [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 Subsection (6) above.

(e) Wholesale meter deliveries delivery records 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 reconciliation 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(s) 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 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 or decrease in the volume of product 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 [illegible] of

one-half percent of the delivery volume or 100 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 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 be evaluated according to the methods and time schedules provided for in Subdivision (f) of Section 2635 of Article 3/

(1) Daily loss or gain of 130 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 reconciled over a period of 30 consecutive (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 reconciled/

(f) The owner or operator shall, 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 varations that exceed the allowable.

Authority: H&SC 25288.2

Reference: H&SC 25284, 25284.1

Adopt new section to read:

2645. 2SNR Soil Testing and Exploratory Boring

(a) Except for vadose zone and ground water monitoring owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2643 of this article which requires borings for vadose zone and ground water monitoring shall implement soil testing pursuant to subpart to this subchapter that is applicable as described in Subsections (b) thru through (n) (d) of this Section. To determine if prior usage of the underground storage tank has resulted in an unauthorized release

(b) Exploration to soil testing is specific underground storage tank locations may be granted by the local agency if any of the following situations exist and if that and confirmed by the local agency.

(1) Evidence to physical characteristics prevent the drilling and operation of drilling equipment within a reasonable distance of 10 feet from the tank;

(2) Soil conditions prevent drilling by any commercially

(c) At least one soil boring shall be drilled from the backfill material of the excavation for the tank. The boring shall be drilled to a depth of at least 10 feet below the bottom of the tank. If the boring encounters ground water, the boring shall be extended into the first water bearing zone. Borings pursuant to subsection (d) of this section shall be drilled.

(d) At least one soil boring shall be drilled adjacent to the longest dimension of the tank excavation. The boring shall be located at a distance of at least 10 feet from the excavation. The boring shall be located so that at least one sample is taken from below the bottom of the tank. The boring shall be extended into the first water bearing zone encountered if ground water is encountered at a depth of less than 30 feet below the bottom of the tank. If ground water is not encountered, the boring shall be extended to a depth of at least 30 feet below the bottom of the tank. Each sample shall be analyzed to determine the presence of unauthorized release. Where subsection (d) of this section requires.

(e) Each sample shall be obtained from the boring(s) immediately prior to the sampling and analysis procedures.

(f) Unconsolidated soil samples shall be obtained at intervals not greater than 5 feet beginning at the ground surface and proceeding to the first

depth of the boring to the ground water level in borings encountering ground water shall be measured first.

(2) The soil samples shall be collected, preserved, stored, and analyzed according to approved EPA methods.

(3) Analysis of the undisturbed soil samples shall be as follows:

(A) If more than one boring is utilized, samples from the same depth from each boring may be composited for analysis if such samples can be made without loss of constituents prior to analysis.

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

(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.

(f) Borings shall be described in accordance with the provisions of Sections 2648(p) and (q) 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.

(i) Samples shall be prepared, stored, and transported by appropriate EPA methods or other similar or superior methods approved by the local agency.

(j) 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.

(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.

(l) ~~(B) Samples may be analyzed in any order of depth.~~ If levels 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 ~~when further soils analysis is not necessary pursuant to this subsection. However, the following additional depths will be required if~~ the hazardous substance(s) shall ~~will~~ be assumed to have originated from the underground storage tank. ~~and~~ A permit shall not be granted unless A permit may be granted if further detailed investigation clearly

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

~~(2) (1) Further investigation pursuant to Sections 13267(b) and 13304 of the California Water Code will be needed to determine the significance and extent of any soil or ground water contamination and to the unauthorized release. This may involve, but is not limited to, analysis of the remaining soil sampled and/or ground water sampling and analysis.~~

~~(C) Samples shall be analyzed for one or more of the most conservative 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-consistency.

(k) All borings 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 engineering geologist.

(l) All wet zones above the first water zone shall be noted and accurately logged.

(m) (l) 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 abandon the underground storage tank pursuant to Article 6 or 7 of this Subchapter.

(n) (m) 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. 2643 or 2645 and an assurance monitoring system shall be installed according to Section 2647.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new section to read:

2646. (2682) Vadose Zone Detection 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 subject to this subchapter shall, except as provided in subsection (b) of this section implement the a vadose zone detection monitoring system pursuant to Subsections (b) (c) through (h) of this Section.

(b) Owners of existing underground storage tanks are exempted from implementing a vadose zone monitoring system if they can demonstrate to the local agency that at least one of the following conditions applies:

(1) Proximity to physical constraints prevent the positioning and operation of existing equipment, excavation pump equipment if required within a horizontal distance of 15 feet from the underground storage tank;

(2) Ground water is periodically less than 5 feet below the lowest of the underground storage tank; and vadose zone monitoring is not possible due to

the characteristics (e.g., composition) of the hazardous substance(s) stored, liquid monitoring is required when possible to complement leak detection around water monitoring as described in Section 2222 of this article.

(d) Vadose zone monitoring is not required if the hazardous substance being stored is not susceptible to detection by vadose zone monitoring methods.

(e) Visual monitoring of the entire tank pursuant to Section 2221 of this article has been implemented.

(b) (c) Vadose zone monitoring shall may consist of vapor monitoring, or soil-pore liquid monitoring, or other forms of vadose zone monitoring, or a combinations of these both methods may be used.

(c) Wells for vapor monitoring shall be fully perforated except for that portion opposite a surface seal and that portion of the bottom of a well where a plugged, blank section 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 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:

(1) Before any method of vapor monitoring 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.

(2) The location and depth at which each sensor is placed relative to the tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil.

(3) Vapor Vaporing monitoring wells placed in the backfill shall be constructed so that any leakage that may pond at the horizontal interface between the backfill and natural soils soils can be detected in the vapor well.

(g) Soil-pore liquid monitoring and other forms of VMs

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 system. Using a soil/pore liquid monitoring system

(4) The proposed technique will be effective in providing early detection of tank leakage.

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

(i) Vadose zone monitoring shall be conducted where feasible and connected to an above-ground alarm system where continuous monitoring is unfeasible, monitoring shall be performed weekly.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new Section to read:

2647. 2686/ Ground Water Leak Detection 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 subject to this Subchapter shall except as provided for in Subsection (b)/c/ of this Section implement a ground water leak detection monitoring system pursuant to Subsections (b)/c/ through (k) /j/ of this Section.

/b/ Owners of existing underground storage tanks are exempted from implementing a ground leak detection monitoring 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 2681 of this Article have been implemented/

/2/ A vadose monitoring system pursuant to Section 2683 of this Article has been implemented and ground water is and will remain at least 5 feet below the invert of the underground storage tank/

/3/ The 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 those 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 Section 2647 during 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 may also be used in conjunction with ground water monitoring whenever possible/

/e/ The ground water monitoring network shall be designed and constructed according to the following criteria/

(1) Three ground water monitoring wells shall be installed around the underground storage tank or tank cluster at spacings of 120 feet or less around the perimeter of the underground storage tank or facility. Additional monitoring wells may be placed at greater spacings if the permittee demonstrates to the satisfaction of the Director that the number of fewer monitoring wells planned and the site are adequate to monitor the integrity of the underground storage tank or facility. Fewer wells may be approved by the Director for irregularly shaped facilities, tank clusters, or sites where site limitations preclude placement of wells at the perimeter of the tank or facility.

(2) One of the three wells shall be located such that it represents the most upgradient location of the underground storage tank or facility.

(3) The ground water monitoring wells shall be constructed to prevent cross contamination of the aquifer and shall be screened or perforated only in the saturated zone. The screen shall be of sufficient length to account for seasonal fluctuations in the water table.

(4) All wells shall be protected from the elements, vandalism, and unauthorized use.

(5) Monitoring wells at which the ground water elevation is above the land surface shall be sized and equipped with a pump capable of draining the ground water level down to or below the land surface.

(6) The ground water monitoring wells shall extend to an elevation that is at least 20 feet below the lowest anticipated ground water level or tank bottom, whichever is deeper, and shall be perforated from the base of the aquifer to the bottom of the well.

(7) 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 2686 of this Article.

(b) All ground water monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the 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 tank bottom. However, wells

shall not extend through clay layers that are below the water table, extensive and 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 5 feet above the bottom cap to a point 10 feet 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 screens that are 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 2 feet above the top of the perforated zone.

(h) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter (ID) of 2 inches which is installed in a boring whose diameter is at least 4 inches greater than the outside diameter (OD) of the casings.

(i) 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 (p) and (q) of this Article.11.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new Section to read:

26H7/ Assurance Ground Water Monitoring

(a) All owners of existing underground storage tanks subject to this Subchapter shall, except as provided in subsection (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 exempted from implementing an assurance ground water monitoring system if they can demonstrate to the local agency that at least one of the following conditions applies:

(1) Ground water monitoring pursuant to Section 26H8 of this Article is used as the principal means of leak detection;

(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 positioning and operation of drilling equipment within a horizontal distance of 500 feet of the tank or tank cluster perimeter;

(4) Soil conditions prevent drilling by any generally existing technique;

(c) Assurance 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 26H8(f)(1) subsection (A) through (D) of this Article shall be performed from 20 feet above the highest anticipated ground water elevation to the bottom of the well;

(2) In order to implement subsection (b) 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 (1), the top 100 feet when more than existing within six within 500 feet of the facility or an exploratory boring constructed as follows:

(A) An exploratory boring shall be drilled in the anticipated downgradient direction from the

underground storage tank. More than one exploratory boring may be required under geologically complex conditions are complex or where more than one boring is needed to adequately cover a facility that covers a large area.

(2) The exploratory boring may be of any diameter capable of minimizing the obstruction of fluid flow and the recovery of hydrocarbons.

(3) The exploratory boring shall be drilled by a drilling method that produces the deepest penetration into the water table.

(4) The exploratory boring shall minimize 10 feet of the tank. If bedrock refusal is encountered before minimum 10 feet of the tank, the boring shall be drilled to refusal. When 50 feet from the tank or less than 50 feet from the tank.

(5) The exploratory boring shall be drilled a minimum depth of 200 feet if 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 (2) of this section, the following shall apply:

(A) The exploratory boring shall be modified if necessary and constructed as a groundwater monitoring well within 20 feet from the uppermost ground water encountered.

(B) In the case of unconfined ground water encountered, the exploratory well shall be constructed 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 constructed from the tank bottom elevation to 20 feet above the highest ground water level in the area, whichever is lowest.

(C) In the case of confined ground water, the well shall be constructed to the elevation of the aquifer and shall be screened from the top of the aquifer 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 plugged and filled with material approved by the director.

(e) Wells shall be sampled semi-annually at a minimum. 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 pH, temperature and conductivity are stabilized. Sampling equipment shall not contain, capture, mask or alter the sample constituents.

(f) Analysis shall be performed for all constituents stored in the underground storage tank and their degradation or transformation products.

(g) Samples shall be delivered, stored, transported, and analyzed according to approved EPA methods.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new Section to read:

2648. General Well Construction and Sampling Methods

(a) Soil and water The sampling equipment and materials 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 materials used for filter to gravel packs or backfill seals 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 immediately after a boring is completed.

(d) All well casings, casing fittings, screens gravel packs and all other components that are installed in the well shall to 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 are to be precisely recorded precisely in the boring log.

(g) Representative samples of additives, cement, bentonite, and filter media ground shall be retained for 90 days for possible analysis analyzed for contaminating or interfering constituents.

(h) (1) All ground water monitoring wells shall be properly appropriately developed until the discharge water contains less than 10 ppm solids.

(i) (1) Well heads shall be provided with a locking water tight cap.

(j) (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. This may be accomplished by providing a locked well cap or by wells within a secure facility.

(k) (1) Pertinent well information including well identification, well type, well depth, boring 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.

(l) 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) 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 backfill that surrounds the underground storage tank and which extends to the ground surface need not 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.

(p) In order to implement monitoring Alternatives 2, 3, 4, and the ground portion of 6, the highest anticipated ground water level and existing ground water level shall be determined. Historic high ground water levels shall be determined by a review of all water level measurements on record for wells within 5 miles 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 3, existing wells within 500 feet of the facility which are perforated in the zone of interest or by drillingat least one exploratory boring constructed as follows:

(1) 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 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.

(4) If ground water is encountered, the boring shall be converted to a ground 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 2640(m) and (n).

(q) All borings that are not used for ground water or vadose zone monitoring 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 abandon 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 method, drilling shall be halted until the responsible professional determines if drilling deeper is advisable.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Article 5. Release Reporting Requirements

Adopt new section to read:

2650 Applicability

(a) All unauthorized releases from the primary or secondary container must be reported according to the standards and procedures requirements of Sections 25284.3 and 25283.4 of the Health and Safety Code and this Article.

(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 monitoring 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.

(c) All unauthorized releases shall be reported. The nature and extent of reporting is dependent upon the storage designation of the tank and whether or not a release of the material. This article describes the

reporting requirements and actions which must be implemented by the owner or operator and the local agency.

(d) Unauthorized releases reported only internal recording with reporting completed as part of the normal monitoring reports are defined in Section 2652 of this Article.

(e) All other unauthorized releases requiring immediate reporting shall 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, 25284.4

Adopt new section to read:

2691. Unauthorized Release Reporting Exception

(a) The report required by Subsection (b) of Section 2650 of this Article shall include:

(1) A recordable unauthorized release is any unauthorized release of a hazardous substance which meets all the following criteria:

(A) The hazardous substance released is from the primary container;

(B) The hazardous substance released does not escape from the secondary containment or cause any deterioration of the secondary container;

(C) The hazardous substance released can be cleaned up within eight hours;

(D) The hazardous substance released does not increase the hazard of fire or explosion;

(b) All recordable unauthorized releases shall be contained and the released hazardous substance shall be safely transported disposed of in an appropriate manner by the permittee. Each occurrence shall be reported in the permittees monitoring reports as required in the permit and shall include:

(1) List of type, quantities, and concentration of hazardous substance released.

(2) Method of cleanup, 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 2712, 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 reestivated.

(6) Facility operator's name and telephone number.

(7) The estimated cost for cleanup to be submitted

voluntarily.

(b) (c) The local agency shall review the information submitted pursuant to Subsection (a) (1) 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 continue to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow compliance with the standards.

(c) (d) 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; or

(2) The mechanical means used to clean-up the released hazardous substance could damage the secondary containers; 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 clean-up process.

(d) (e) 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 25288.2

Reference: H&SC 25284.3

Adopt new section as follows:

Chem. Unauthorized Releases Requiring Immediate Reporting

(a) All other unauthorized releases which are reportable 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 (1) (2) and (3) of this Section shall be followed:

(1) A reportable unauthorized release is any unauthorized release of hazardous substance which meets one of the following criteria:

(A) The released hazardous substance escapes from the secondary container causing fire a explosion, explosive danger;

(B) The released hazardous substance increases the danger of fire or explosion;

(C) The released hazardous substance causes 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 2632, 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, and the State Office of Emergency Services or the and regional board Regional Water Quality Control Board;

(c) Within 5 working days of detection the release, occurrence 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 clean-up implemented to-date, proposed clean-up actions, and approximate cost, and proposed schedule actions

(4) Method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water (include whether a copy of hazardous waste manifest(s) is if 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) 27022(a) of Article 10, then appropriate reports pursuant to that article shall also be filed.

(6) Facility operator'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 agency 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)(3), and (c)(4) of this Section.

(e) The local agency shall retain the permit information

[illegible]

(g) (1) The reporting requirements of this section are in addition to any reporting requirements specified by Section 13271 of the Water Code and other laws and regulations.

(2) The local agency, Regional Board, and Department of Health Services or other appropriate agency shall, pursuant to their respective authorities, require the permittee to investigate the extent of soil or groundwater contamination and threat to public health resulting from the unauthorized release and to implement appropriate remedial action

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, to allow the use of interior coating 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 agency of the repair process.

(c) Section 2662 describes the required methodology which must be utilized in the interior coating repair process.

(d) Section 2663 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) describe the

monitoring which shall be performed prior to placing the underground storage tank back in service.

Authority: H&SC 25288.2

Reference: H&SC 25284.4

Adopt new section to read:

2651. 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. ~~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 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 lining is the proposed 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 single hole with a diameter of greater than one and one-half (1-1/2) inch ~~and /// inch~~ or

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

(4) any failure or opening within six inches of any seam or wall.

(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 does not exist. If a serious corrosion problem exists, an interior lining 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 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:

Authority: H&SC 25288.2

Reference: H&SC 25284.5

2663. 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 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 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 effectivedate of these regulations or 1 year after a listing or certification procedure is available.

Replace new section to read

2632 Tanks: Corrosion protection

(a) Where any portion of the tank contained shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the tank test as described in Section 2643 of Article 4. The tank shall also be vacuum tested at a vacuum of 5.3 inches (135 mm) Hg for one minute. The vacuum test shall not be required if technology is not available for testing the tank on site using accepted engineering practices. Standard hydrostatic tests specified in section 2712 of the Flammable and Combustible Liquids Code adopted by the National Fire Protection Association on November 22, 1981 (NFPA 30-1981).

(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, as described in the applicable sections of ANSI B31, American National Standard Code of Pressure Piping or National Fire Protection Association Flammable and Combustible Liquids Code (NFPA 30).

Authority: H&S. 25186.5

Article 7. Closure Requirements

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 shall apply to those underground storage tanks in which the storage of hazardous ~~materials~~ substances ~~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 substances. ~~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 substances ~~material~~ consistent with permit conditions.

(c) The permanent closure requirements of Section 2672 shall apply to those underground storage tanks in which the storage of hazardous substances ~~materials~~ has ceased and where the owner or operator has no intent within the

next two years to use the underground storage tank for storage of hazardous substances. ~~materials~~

(d) The requirements of this Article do not apply to those underground storage tanks in which hazardous 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 continue to apply.

(e) During the period of time between cessation of hazardous substance ~~material~~ 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 90 days~~ Prior to closure, ~~cessation of storage of hazardous materials~~, unless such cessation occurs as a result of an unanticipated release of an ordered to ~~remove~~ an unauthorized release of minimize its effect, 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 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 the discovery of an unauthorized release or actions taken to prevent or minimize its effects.

(g) Underground storage tanks that have experienced an unauthorized release do not qualify for temporary 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 which ~~that~~ would allow the underground storage tank to be capable of storing hazardous substances ~~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.

Authority: H&SC 25288.2

Reference: H&SC 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 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, 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. ~~As follows:~~

~~(A) product / liquid stored for future use or treated as a hazardous waste;~~

~~(B) Hazardous waste / liquid received or disposed of as a hazardous waste;~~

(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 completely 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 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 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 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.

(e) 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 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 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

Adopt new Section to read:

2672. Permanent Closure Requirements

(a) Underground storage tanks subject to permanent closure shall comply with either Subsection (b) for underground storage tank system removal or Subsection (c) for closure in-place. It is not essential that all portions of an underground storage 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 applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code, in addition to the following: 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 is legally stored for future use or handled as a hazardous waste

(B) hazardous waste is legally recycled or disposed

of as a hazardous waste;

(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 completely 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, that is destined for disposal shall be handled, 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 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.

comply with all of the following:

(A) Reuse shall not be inconsistent 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

(B) 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 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. Comply with one 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)(2) of this Section/

(A) The tank system shall be thoroughly cleaned/

(B) The tank system shall be cut or punctured in sufficient locations to render it obviously unfit for use/

(C) Apply appropriate markings to the tank/

(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 Managed as follows/

(A) product / Legally system for future use or Managed as a Hazardous waste/

(B) Hazardous waste / Legally recycled or disposed of as a Hazardous waste/

(2) All piping associated with the tank shall be removed Managed 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 Hazardous waste/

(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 that cannot be removed, such as ~~sand or~~ concrete, unless the owner intends to use the tank for the storage of a nonhazardous substance which is compatible with the previous use 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 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 for tanks or every 20 lineal feet 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 ~~2646~~ of Article 4 shall be implemented, if feasible.

(3) Soils shall be analyzed for all constituents of ~~concern~~ 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.

Authority: H&SC 25288.2

Reference: H&SC 25286

Article 8. Categorical and Site-Specific Variance Procedures

Adopt new section to read:

2600. Applicability

(a) This Article sets up procedures for categorical and site-specific variances from the requirements in Sections 25284 and 25284.4 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 Sections 25288.3(a) and (c) of the Health and Safety Code.

(b) Section 2601 specifies the procedures that must be followed by the applicant and the State Board for categorical variance requests.

(c) Section 2602 specifies the procedures that must be followed by the applicant, local agency, and the regional board for site-specific variance requests.

Authority: H&SC 25288.2

References: H&SC 25288.3

Adopt new section to read:

2681. Categorical Variances

(a) A categorical variance allows [a] 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 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, 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 [local] agencies and persons who may be affected by or may be interested in the variance request.

(6) A fee of $26,000 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 bill the applicant for additional anticipated costs, if necessary, before the public hearing and before preparation of a decision on the application.

(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.

(e) [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).

(f) [e] The State Board shall remand the application to the appropriate regional board if it determines that the application falls within Section 2682.

(g) (f) The State Board shall hold at least two 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. Notice of the hearings shall be provided at least 15 days in advance to any person who requests such notice in writing. Notice shall also be provided to any affected local agencies and to any person who has submitted data or views on the proposal. 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 (or sent by fax) it shall be given at least 15 days before the hearing.

(h) (g) Hearings shall be conducted according to the requirements governing adjudicatory proceedings under Article 4 of this Chapter. The State Board or its designee may request that any person who files an objection to the hearing (or intervention) provide additional information on particular points and may require that similar objections be consolidated. The State Board may require that a statement of the qualifications of each witness testifying and indicate if the witness is testifying as an expert. The State Board may also request additional information from any person who has submitted data or views on the proposal.

(i) (h) If the State Board grants the variance, it will

state that among other things the variance is subject to.

(j) (i) An application for a categorical variance must demonstrate to either the Secretary or Secretary's designee that the proposed alternative will protect the public health and the environment. Factors to be considered in making this determination include:

(1) (A) the location of the state waters that may be affected by the discharge and the characteristics of the receiving waters. The record may be supplemented by any person provided such information according to the State Board procedures governing an adjudicatory hearing. 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.

(k) The State Board may dismiss a proposed variance if requested to a request for a categorical variance if a hearing request. The requirements governing hearing requests and format specifications of State Board petitions for variances which are contained in Subparagraph 8 (f) of this Subchapter shall apply.

(l) (j) 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.

(j) ~~(I)~~ 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) ~~(M)~~ 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~~ ~~(II)~~ not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this Section and Subchapters 5 and 6 of this Chapter. ~~applied above 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.

Authority: H&SC §5208.2

Reference: H&SC §5208.2

Adopt new section to read:

§ 2510. Site-Specific Variances

(a) A site-specific variance allows for 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.

(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 within which land use

jurisdiction over the permittee's site to hold the required public hearing and comment on the proposed variance application. The local agency shall also forward a recommendation to the Regional Board at least 21 days prior to the hearing.

(d) The local agency shall have 30 days after completion of the hearing or the receipt of the Regional Board's staff recommendation, whichever is later, to forward its recommendation to the Regional Board.

(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) Water and contaminant quantities demonstrating 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 2 or 4 of this subchapter would be unnecessary to adequately protect the full and beneficial uses of the waters of the state from an unauthorized release; or

(B) The strict application of Articles 2 or 4 of this subchapter would create practical difficulties not generally applicable to other facilities or property.

(3) Any special circumstances 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.

(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).

(C) A fee of $2,750 $7,720 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) (d) 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 Subsection (c) of Section 25288.3 of the Health and Safety Code for local agencies to join in the application. described by subsection (d) of this section has expired. Notice of the hearing 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 variance. When the notice is mailed, it shall be placed in the mail at least 21 days in advance of the hearing.

(f) [illegible] Any site-specific variance shall be [illegible] prescribe appropriate additional [illegible] conditions [illegible] 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) [illegible] The regional board shall consider the local agency's [illegible] 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.

(h) [illegible] 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.

(i) [illegible] 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 will not modify or revoke the variance until it has followed procedures comparable to those prescribed in this Section and Subchapters 1.3 and 6 of this Chapter. [illegible] hearing for approval of a variance. The regional board shall notify the local agency of the modification or revocation. [illegible] The local agency shall [illegible] modify or revoke the permit for the site.

Authority: H&SC 25280.2

Reference: H&SC 25283.3

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 4~~ of this ~~Chapter~~ Subchapter. These procedures are in addition to those established by Subsection 25288.3(b) of the Health and Safety Code.

Authority: H&SC 25288.2.

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.

(2) 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 (Division 13, commencing with Section 21000) of the Public Resources Code.

(4) ~~A fee of $11,500~~ 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 Board 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 notice and other procedural requirements contained in Sections (a) through (d) of Article 5 of this Subchapter shall apply.]

[c] The board shall make its determination whether to authorize a local agency to implement additional standards within sixty days 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.

(d) [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 adequately

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 followed procedures comparable to those presented in Subchapters 1.5 and 6 of this Chapter. [outlined herein for issuance of the authorization.]

Authority. H&SC 25288.2

Reference: H&SC 25288.3

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 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 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 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 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.

~~(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.~~

(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, corporation or public agency which~~ owns the underground storage tank or tanks.

(2) The name, location, mailing address, and phone number ~~and type of facility~~ 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 ~~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 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, lining, wrapping, and cathodic 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 monitoring program including, but not limited to, the following where applicable:

(A) visual;

(B) tank testing or inspection procedures;

(C) inventory reconciliation controls including 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 methods, 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 tank.

(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 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 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 regulations.

Authority: H&SC 25288.2

Reference: H&SC 25283.2

Adopt new section to read:

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~~ 30 days after ~~prior to the~~ any changes in the usage of any underground storage tanks, including:

(1) the storage of new hazardous substances; or

(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 within the time frame specified in Subsections 2652(b) and (c)).

(c) Written records of all monitoring performed shall be maintained 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 field, 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 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 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) (e) 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 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 receiving the transfer request.

(f) 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 expiration of the provisional permit. A provisional permit will be issued for no longer than one year with a one-time extension of six months. Three months shall 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 90 15 days of the expiration of the provisional permit to assure that the permit conditions have been met.

(g) The 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 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 listed 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 ~~materials~~ shall be filed with the local 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.

~~(i) The purpose of the inspection described in subsection (h) 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 reported the underground storage tank as required by the permit; and~~

~~(3) Determine whether the underground storage tank is in a safe operating condition.~~

(i) ~~(j)~~ 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, 25283.1, 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 (d) of Section 2712 of this Article or any unauthorized releases as defined in Article 2 annually on the 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 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 secret;

(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 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) If the local agency or State Board or the regional board determines that the request for confidentiality is clearly frivolous, 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 letter.

(d) If the validity of the request for confidentiality ~~trade secrecy~~ is unclear, the local agency or 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 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~~ ~~in this~~ 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 letter to the applicant stating that the local agency or the State Board or Regional 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.~~

(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.

(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 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 ~~obtain~~prevent ~~prevention~~ of disclosure of information pursuant to other provisions of law.

Authority: H&SC 25288.2

Reference: H&SC 25283.6

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

UNDERGROUND TANK REGULATIONS

CALIFORNIA ADMINISTRATIVE CODE
TITLE 23 WATERS
SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

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Vol. IV

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 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 ~~except as provided in Section 25281(a) of this Article or Article 8 and 9 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 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 ~~these~~ 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

[illegible] been or to be

25[illegible]. Exemptions

(a) The owners of underground storage tanks that meet any of the following [illegible] 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, ad plod ar ordinance which, at a minimum, adopts the requirements of Article 3 and Article 4 of this subchapter or implements the requirements of Sub hapter 6.7 of Division 20 of the health and safety code pertaining to construction and monitoring standards for new and existing urlerground storage tanks Sections 25281 and 25284, provided that:

(A) The ordinance, as it may be amended, continues to meet, at a minimum, the requirements of Article 3 and Article 4 of this subchapter or implements the requirements of Chapter 6.7 of Division 20 of the Health and Safety Code;

Territories Zones are Zone[illegible]; and

(B) The county or city issues permits for underground storage tanks pursuant to the ordinance, and submits a copy of the permit application to the State Board as specified in Article 12 of this subchapter;

(2) The county or city issues permits for underground storage tanks pursuant to an ordinance which, at a minimum, adopts the requirements specified in Article 3 of this subchapter;

(3) The county or city issues permits for underground storage tanks pursuant to an ordinance which implements the requirements specified in Article 12 of this subchapter;

(4) Underground storage tanks and are used for the storage of [illegible] used for the operation of [illegible] and subject to the jurisdiction of the [illegible] if the county [illegible] ordinance [illegible] by [illegible] prior to [illegible] the [illegible] a level of protection [illegible] by [illegible] of the [illegible] or [illegible] and Safety Code, if the tank was [illegible]

after June 30, 1988, of protection equivalent to that provided by Section 25281.1 of the Health and Safety Code if the tank was installed on or before June 30, 1988.

(3) 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.

(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 licensed pest control operator, as defined in Section 11705 of the Food and Agricultural Code, who is primarily involved in agricultural pest control activities.

(2) (5) 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 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) Structures such as sumps, separators, storm drains, catch basins, oil field piping, lines, refinery pipelines, ingoons, evaporation ponds, well cellars, separation sumps, lined and unlined pits, sumps and ingoons 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 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

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 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 ~~Section~~ 25280 of the Health and Safety Code:

Board

Department

Facility

Hazardous substance

Local agency

Operator

Owner

Person

Pipe

Primary containment

Product-tight

Secondary containment

Single-walled

Special inspector

Storage/store

Unauthorized release

Underground storage tank

Authority: H&SC 25283.5

Reference: H&SC 25280, 25281, 25284

2621. 20201 Additional Definitions

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

"Board" means the State Water Resources Control Board.

"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. That cannot be removed, such as concrete.) substance

"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 on the Department of Health Services' comprehensive master list which shall include:

A. Substances on the list prepared by the Director of the Department of Industrial Relations pursuant to Section 6382 of the Labor Code.

B. Hazardous substances as defined in Section 25316 of the Health and Safety Code.

C. 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. This classification is contained in the Flammable and Combustible Liquids Code 1981 (NFPA 30).

"Operational" means the point in time when all necessary permits have been issued pursuant the implementation of the underground tank or, if no permits are necessary, the point in time when notice

implementation of the tank program.

"Implementing 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.

"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 fabricated 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 upon a highway, 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 or fuel an engine.

"Non-underground source tank" means any underground source tank subject to this subchapter which is temporarily either the effective date of this subchapter or at any time after the effective date of this subchapter which is temporarily or permanently taken out of service in accordance with the requirements of Article 3 of this chapter, or which is installed after January 1, 1984, and is not an underground source tank as defined in this section, and is not a tank which is exempted from the permit requirements of Article 4 of this chapter by the local agency if prior to exemption of tanks from permit requirements, operating plans for tanks or tank systems have been approved by the local agency in accordance with Section 25284 Carrying out of provisions of this Article and Section 25285 Carrying out provisions of this Article and Section 25286 Carrying out provisions of this Article and the tank was installed after the date of adoption of these ordinances.

"Operating permit" means the operation of an underground storage tank.

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

"Person" means an individual, trust, firm, joint stock company, corporation, limited liability company, partnership, and association. "Person" also includes any city, county, district, and the state, and department or agency thereof. "Person" includes and United States, to the extent authorized by federal law.

"Pipe" means any pipeline or system of pipelines which is used in connection with the storage or use of

intended to transport hazardous substances in interstate or international 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.

"Specialist knowledgeable" 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 assess, at a minimum, the structural soundness, seismic safety, the compatibility of containment 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 10 50 percent of the surface area of the underground storage tank volume, that can be in contact with the stored material including connected piping, is below the ground surface.

"Tank" means any single container including connecting piping which is for used 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 systematically with underground storage tanks.

"Unauthorized release" means any release or emission of any hazardous substance unless the release is authorized by the

~~State Water Resources Control Board pursuant to Division 7~~
~~(commencing with Section 13000) of the Water Code.~~

"Unauthorized release" as defined in Chapter 5.7 of Division 20 of the Health and Safety Code does not include intentional withdrawals of hazardous substances for the purpose of legitimate sale, or use, or disposal.

~~"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.~~

Authority: H&SC 25245.2

Reference: H&SC 25281, 25291, 25299

Article 3. New Tank Construction and Monitoring Standards

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 specify construction and monitoring standards for all new underground storage tanks. ~~systems~~ New underground storage tanks 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 monitoring standards of Section 2634 must also be used.

(c) All new underground storage tanks and secondary containers tank systems must comply with Section 2633.

Authority: H&SC 25288.2

Reference: H&SC 25280, 25284

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.

(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 ~~contain~~ the hazardous substance stored within the primary container(s) ~~for a period of 72 hours until~~ for at least the maximum anticipated time period sufficient to allow detection and removal ~~recovery~~ of the unauthorized release. ~~of leakage from the primary container~~

(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) [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 secondary container, ~~storage facility~~ whichever is greater.

(f) [e] If the secondary container ~~storage facility~~ is open to rainfall, then it ~~the secondary container must~~ 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) ~~[d] and [e]~~ of this section.

(g) [f] The volumetric ~~volume~~ requirements for the pore space of a granular material placed in the a secondary container as ~~which consists of the pore space in~~ backfill for the ~~placed around the~~ primary container shall be equal to or greater than ~~110 percent of~~ that required in ~~Sections [d] and [e]~~ 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 ~~capable of removing~~ to accumulate,

temporarily store, and permit removal of any 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 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.

(2) The membrane liner shall be considered to have satisfied the requirements of Subsection 2631(c) 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.

(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 5 percent of the original elongation.

(C) The liner membrane material hardness (brittleness) after 24 hours of immersion in the hazardous substance shall be within 5 percent of the original hardness.

(D) For containment test, the rate of transport through the liner membrane material of the hazardous substance after a period of 24 hours shall not exceed 5 percent by weight of the hazardous substance being tested. The liquid weight 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 hours shall not exceed 0.1 percent by weight of the section of liner being tested.

(G) 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.

(k) The liner shall be installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.

(l) 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) ~~(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.

(n) ~~(h)~~ Double-walled underground storage tanks which satisfy the construction standards ~~requirements~~ 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. ~~2631(d)~~

(o) The design of double-walled 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 ~~point~~ specific location within the annular space, as required, to be detected by a monitoring device or method.

(r) Any special accessories, fitting, coating, or lining not inherent within the initial design of the primary container or double-walled tank shall be approved by a nationally recognized, independent testing organization or a demonstration of integrity with the primary container or double-walled 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: H&SC 25288.2

Reference: H&SC 25280, 25284

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 containers 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 ~~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 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) 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 and 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.

(ii) Testing of the underground storage tank utilizing the procedures described in Section 2643 of Article 4 of this Subchapter.

(iii) Removal of all hazardous substances from the underground storage tank and the secondary container [AS SPECIFIED IN SUBPART VIII 7A1 OF THIS SECTION].

(2) A program which relies on detecting the hazardous 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 requirements shall apply when appropriate.

(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.

Table 3.1

Methods of Monitoring for Hazardous Substances in the Secondary Container

Condition of the Secondary System [1]	Type of Substance Stored	Methods of Monitoring			
		Liquid Level Indicator [2]	Hazardous Substance Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
Dry	Volatile	X	X	X	X
Dry	Nonvolatile	X	X		X
Wet	Volatile	X	X	X	X
Wet	Nonvolatile	X	X		X

[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 "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.

(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 on-site, and an equipment

maintenance schedule for that the equipment located on-site.

(3) The name(s) or title(s) of the person(s) responsible for authorizing the work to be performed.

(b) Secondary containers shall be equipped with a collection system capable of removing any precipitation, groundwater infiltration, or hazardous substance and liquid leakage from the primary container.

(c) The floor of the secondary containment shall be constructed of a firm base and sloped to a collection sump. The sump and the access casing shall be sized to allow 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 water-proof cap.

(d) The casing shall be of such length as to permit the pneumatic submersible pump or bailer safety factor and construction of material that will not be affected adversely by the stored product for the expected duration of storage.

(e) The sump shall be monitored with a continuous sensor/alarm to prevent or give adequate warning of liquid removal and maintenance if needed. The continuous sensor alarm is capable of alerting the operator.

(f) Secondary containment and sump O/G inches of product shall be capable of containing the largest anticipated precipitation/groundwater/infiltration and hydrostatic pressure. The secondary containment shall be capable of containing 110% of the largest tank within the containment or 10% of the aggregate volume of all tanks, whichever is greater. The containment shall be capable of containing precipitation and groundwater infiltration.

(g) The containment system shall be designed and operated to prevent the release of liquid to the environment.

(h) The containment space between the sump and the outer containment wall shall be free of debris and water.

(i) The containment space between the sump and the outer containment wall shall be free of debris and water.

(j) The containment space between the sump and the outer containment wall shall be free of debris and water.

~~detection system are exempt from the requirements of Sections 2632(d) through (g).~~

Authority: H&SC 25288.2

Reference: H&SC 25280, 25284

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. 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 ~~consist of pressurized tanks~~ be composed ~~constructed~~ 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 containment~~ system decribed in Subsection (d) through (f) of this section. ~~2633 and (e)~~

(c) Primary containers used for the underground storage of motor vehicle fuel and constructed of materials other

to the requirements of Sections 2631 and 2632 of this article.

(d) The permit applicant ~~secondary container~~ shall be demonstrate to the satisfaction of the local agency that the leak interceptor and detection system achieves the ~~integrity and compatibility~~ criteria of Section 2631(e) of this article.

(e) Method of construction for the leak interception and detection system for utilizing membrane liners shall be considered to have satisfied the requirements of Section 2631 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(g)(1) 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 (e)(1)(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)(2) 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) [(e)] The leak interception and detection system [secondary containment] 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 secondary containment 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, secondary container

(2) The maximum leak which could go undetected under the monitoring inventory reconciliation method required prescribed in Subsection [(f)] of 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 secondary container to the highest anticipated level of ground water;

(5) [(3)] The nature of the unsaturated soils under the leak interception and detection system secondary container and their ability to adsorb contaminants or allow vertical movement of contaminants;

(6) [(4)] 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) [B] The nature and timing of the response plan to cleanup the hazardous substances which have been discharged from the primary container.

(g) [F] Pressurized piping systems that are connected to [INCLUDE AN AUTOMATIC ACTUATING CONTINUOUSLY OPERATING PRESSURE LOSS DETECTOR AND FLOW RESTRICTION DEVICE AND SUCTION 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 CONTAINER] 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. [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.] Suction piping systems shall be evaluated at least once each day of operation to detect if a leak in the piping system exists.

Authority: H&SC 25288.2

Reference: H&SC 25280, 25284

Adopt new section to read:

2634. Monitoring Standards for New Motor Vehicle Fuel Underground Storage Tanks

(a) [MONITORING 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 [CONSIST OF 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 Code. In addition, [1] monitoring of the leak interception and detection [SECONDARY CONTAINMENT] system shall be pursuant to Subsections (b), (c), and (d) of this section.

[2] [DAILY GAUGING AND INVENTORY RECONCILIATION BY THE OPERATOR PURSUANT TO SECTION 2644 2643 OF ARTICLE 4]

[3] [HYDROSTATIC TESTING OF THE TANK EVERY TWO YEARS ACCORDING TO THE CRITERIA SPECIFIED IN SECTION 2643 2642 OF ARTICLE 4] and

[4] ALL PRESSURIZED PIPING SYSTEMS SHALL BE MONITORED

utilizing an online pressure loss detector and flow reduction device. The detector 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) The floor of the leak interception and detection system shall be constructed on a firm base and sloped to a specific location of collection sump.

(c) (b) An Access casing(s) shall be installed to intercept in the collection sump. or specific location at each monitoring 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 container to enter the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering with a safety factors; of 1/2

(3) Constructed of materials that will not be

structurally weakened by the stored hazardous substance 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 system; 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 container 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. ~~and the maximum leak which could go undetected under the inventory reconciliation method presented in subsection (e).~~ 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.

(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.

~~(d) Monitoring of areas containing underground storage tanks for motor vehicle fuel, diesel fuel, or any hazardous substance listed in section 25316 of the Health and Safety Code shall include, but not be limited to, the following:~~

~~(1) Monitoring wells shall be used for the storage of motor vehicle fuel that has a less dense than water at standard conditions or diesel fuel and shall be capable of detecting the presence of at least one inch of these substances or greater than any inventory variation allowed by subsection (e)(2) of this section if required by the enforcing agency. Monitoring wells shall be constructed of the following and in a manner approved by the~~ alarm system

procedures specified in subsection (b) of this section.

(1) Daily loss or gain of 100 US gallons or

(2) Seven (7) day loss or gain of five percent of the underground storage tank monthly volume of purchased product measured over the seven days or 100 gallons, whichever is greater, and 350 gallons or

(3) Cumulative reconciled over a period of 12 consecutive 30 days loss or gain of one-half percent of the underground storage tank monthly volume of material stored during the period that the cumulative loss or gain is greater or 100 gallons, whichever is greater.

(c) (1) If inventory reconciliation controls indicate a gain or loss of the hazardous substance greater than that specified in subsection (b) (1), (2) or (3) of this section, 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 period. Reporting as required in Article 5 of this subchapter shall be

followed.

If completion of the steps described in subsections (1), (2) or (3) of this subsection indicate that a release has occurred, the operator shall perform steps to determine the source of the loss or gain, and the remainder of the steps need not be completed. If completion of the steps in subsections (1) or (2) of this subsection indicate that a release has occurred, the operator shall perform steps to determine the source of the loss or gain, and the remainder of the steps need not be completed.

Transfer of hazardous substances only may be made to the underground storage tank only during implementation of the steps provided that the steps are completed within the specified time period and any loss or gain did not exceed one half the level specified in subsection (b) (1), (2) or (3) of this section. Inventory control and daily reconciliation lines continue during implementation of the steps.

(1) The operator shall notify the owner or designee of the fact that inventory reconciliation indicates a gain or loss of greater than one percent of the substance in which the tank is known to

completion of the daily response activities shall be initialed and the time of entry recorded.

(2) The operator shall review the inventory records within one (1) month to determine if an undue loss exists. Loss of product from within secondary containment shall be investigated in accordance with subsection (c) (3) of this section.

(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 determination existed. This shall be completed within 12 months of the conclusion of subsection (c) (2).

(4) The regular accessible physical facilities shall be carefully inspected for leakage. This shall be completed by trained personnel within 12 hours of completion of subsection (c)(2).

(5) All dispenser meters shall possess within manufacturer specifications. Items shall be checked for calibration within 12 hours of completion of subsection (c) (2).

(6) All piping shall be tested in accordance with specified in Section 9707 or 9707.1 of the National Fire Protection Association (NFPA) 30 Flammable and Combustible Liquids Code, 1987 (NFPA 329) within 12 hours of completion of subsection (c)(2). All piping shall be capped after the daily deliveries in subsection (c)(1) if excavation is necessary to perform the tests and if the daily deliveries in subsection (c)(1) is completed within 24 hours of the completion of subsection (c)(2). If this is not completed, then the daily deliveries in subsection (c)(1) shall be suspended until the subsection (c)(2) is completed.

(7) The tanks shall be tested and passed in Section 2502 2502 of Article 4 within 24 hours of completion of subsection (c)(2).

(8) Additional tests or investigations as required by the local agency.

(e) (1) A response plan for an unauthorized release shall be developed prior to installation for any leak interception and detection system combination which does

not meet the volumetric requirements of Sections 2631(e), (f), and (g) ~~[d] and [e]~~ 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 reqirements 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 ~~secondary container~~ in relation to the volume of the primary container;

(2) The amount of time the leak interception and detection systen ~~secondary container~~ 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 ~~secondary container~~ to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the leak interception and detection system ~~secondary~~

~~container~~ 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 ~~secondary container~~ sump.

Authority: H&SC 25288.2

Reference: H&SC 25280, 25288

Adopt new section to read.

2635. General Construction Standards

(a) The following sections 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

(1) Cathodically protected steel tanks, steel tanks 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.

(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.

(3) ~~(1)~~ Except for steel underground storage tanks, a ~~NONCORROSIVE NONSTEEL~~ 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 the tank and bonded or seam welded in place. ~~AND HAVE A MINIMUM AREA EQUAL TO THE OPENING OR A GUIDE TUBE, WHICHEVER IS SMALLER~~

(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 or without coatings or lined corrosion resistant materials, noncombustible reinforced plastic coatings, composites, or equivalent systems which have been checked using electrical holiday testing 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 history 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.

When cathodic protection is selected, the system shall be designed by a registered corrosion engineer or a NACE corrosion specialist or in

accordance with the certification listing, whichever is applicable. The cathodic protection system shall be initially tested by a registered corrosion engineer or NACE corrosion specialist

Monitoring of The cathodic protection system shall be reinspected 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.

Vaulted 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 manufacturer'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, Incorporated, (UL) or any other nationally recognized independent testing organization shall be evidence of compliance with this requirement. guarantees by the manufacturer to be provided prior to leaving the factory

(7) (A) Before being covered, enclosed, or placed in use, Following installation all underground storage tanks and piping shall be tested for tightness either 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 tested according to the requirements specified in Section 3-7.1 of NFPA 30, Flammable and Combustible Liquids Code. 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

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. In accordance with standards and procedures set forth in Article 4

(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 tank and either (B) or (C) (2) or (3) or both;

(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.

(D) A spill containment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface environment

(9) The overflow protection system required in 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 underground storage tank; or

(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 filled delivered plus 200 gallons, whichever is less, as determined by tank gauging; or

(C) The hazardous substance being delivered can be metered into the underground storage tank and the available underground storage tank capacity is determined immediately prior to filling.

(D) A spill containment basin surrounds the fill pipe and prevents the inflow of the motor vehicle fuel into the subsurface environment;

(E) Commercially produced steel tanks and steel tanks clad with glass fiber reinforced plastic shall be fabricated and designed by the requirements in Underwriters Laboratories (UL) 58, Standards for Steel Underground Tanks for Flammable and

Construction Division 1978 of the American Society of Mechanical Engineers (ASME) Pressure Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code, 1983, and have a minimum thickness of at least 7 gauge (0.178 inch).

(b) Fiberglass reinforced plastic tanks shall be of design and construction in accordance with UL Standard 1316, Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum, July 1983, or Underwriters Laboratory of Canada, Standard CAN/ULC-S615-M1983, Standard for Reinforced Plastic Underground Tanks for Petroleum Products, March 1983.

(c) Fiberglass reinforced plastic tanks shall be designed based on tests by the manufacturer for durability and chemical compatibility with the hazardous substances to be stored using applicable sections of American Society for Testing and Materials (ASTM) D4021-81, Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Storage Tanks, August 1981, and the manufacturer shall provide the owner with written assurance of the compatibility

(c) Secondary containers including leak interception and detection systems installed pursuant to Section 7655 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 one foot. an additional distance-foot

(2) (A) 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) [B] 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. ~~SHALL BE SEPARATED IN WHEN THE PRIMARY AND SECONDARY CONTAINMENT AS AS TO AVOID POTENTIAL INTERMIXING~~

(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.

(7) 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. ~~MANWAYS~~ 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.

(B) 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.

(C) 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).

(D) The original excavation for the secondary container shall have a waterproof 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. Manways shall be constructed as water-tight as practical. Double-walled tanks are exempt from this requirement.

(E) 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 included in the particulars of the application. Copies of the drawings, photographs and plans must be submitted in the number required by the Agency.

(12) Materials that may cause a fire or explosion, or that produce a flammable/explosive gas, must be stored in a primary or secondary containment system at a site in such a way that the primary and secondary containment system will not be adversely affected by the material stored in it for the duration of the storage period.

(13) Drainage of liquid from milk a secondary containment system is connected in a manner approved by the local Agency so as to prevent unauthorized discharge into water bodies. The liquid must be analysed to ascertain the presence of any of the parameters mentioned in the primary containment prior to initial operation and annually thereafter for any subsequent discharge. Records of the analysis must be submitted to the Agency.

(14) All primary containment and secondary containment systems must be

impervious to the materials they are designed to contain and must be maintained in good condition.

(15) All primary containment systems must be labelled clearly to indicate the type of material stored.

(16) When required by the local Agency, all secondary containment systems must be equipped with a method of detecting the presence of milk or other materials in the containment system.

(17) A minimum of two (2) of the containment systems mentioned in (12) must be available.

(18) No more than one primary container must be connected to any secondary containment system.

(6) The overfill protection system required in subsection (1) of this section shall be satisfied for aboveground storage tanks containing motor vehicle fuels if either:

(i) Both the fill level is visually monitored and the filling operation is controlled by the facility operator during filling of the aboveground storage tank; or

(ii) The available capacity of the tank to be filled is determined prior to filling to be at least 10% greater than the capacity of the tank to receive the entire contents of the compartment to be loaded or delivered; or

(iii) The mechanical overfill prevention system can be observed from the tank and the available tank capacity is determined prior to filling.

(7) All primary containers and secondary containment of steel tanks shall be protected by either:

(i) A properly fitted/installed cathodic protection system; or

(ii) Corrosion resistant materials of construction such as fiberglass-reinforced plastic; or

(iii) Other tank material as approved by the Authority

(8) The type of protection to be employed shall be based on the corrosion history of the area and the judgment of a registered corrosion engineer

Authority: RCW 25288.2

Reference: RCW 25280, 25288

Article 4. Existing Underground Storage Tank Monitoring Standards Criteria

Adopt new section to read:

2640. Applicability

(a) All owners of existing underground storage tanks subject to this subchapter shall implement pursuant to the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code 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 local agency shall not issue a permit if the underground storage tank cannot be adequately monitored. To be adequate unless the monitoring system may be is capable of: determining the containment ability of the underground storage tank and detecting active and historic unauthorized releases any active or future unauthorized releases. If the monitoring technique(s) selected is designed to directly monitor 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. This may occur in the future, and, in certain circumstances, when monitoring depends on determining the presence of if hazardous substances are present in the area around the underground storage tank, then the monitoring system must initially be capable of determining their presence, be capable of measuring the ground water quality directly. 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 determine if unauthorized releases are occurring or have occurred in the past and to detect unauthorized releases that occur in the future 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 quality of the ground water underlying the tank. Therefore, multiple monitoring systems, as described in Sections 2641 through 2647, shall be implemented where technically feasible to existing tanks that do not have

a secondary containment that meets the requirements of Article 8.

(f) 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 which achieve this intent may be approved by a local agency.

(c) (d) All owners of existing underground storage tanks subject to this Subchapter shall implement visual monitoring as described in Section 2642 2643 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, 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 flooding or the presence of other hazards shall be utilized during those portions of the year. When feasible If however, unless visual monitoring cannot be is

implemented for the entire underground storage tank throughout the entire year then one of the other 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.

(d) (e) All owners of existing underground storage tanks subject to this Subchapter who are not able to implement visual monitoring as specified in Section 2642 2643 of this article shall implement one of the monitoring alternative each alternative monitoring method as specified in Section 2641 2642 through 2645 of this article. Soils monitoring specified in Section 2644 of this article shall not be exempted based on the ability to implement visual monitoring unless an alternative monitoring method is approved by the local agency which meets the intent of subsection (c) of this section. If an owner demonstrates to the local agency that the exemption criteria should apply, the owner shall be relieved of the obligation to implement soils monitoring.

(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.

(g) 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) and (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, remove the necessity to implement any or all of the alternatives described in Sections 2642 through 2648 provided that all monitoring objectives can be achieved with the additional methods.

(h) All owners of underground storage tanks shall, if feasible, install an assurance monitoring system which monitors ground water beneath the underground storage tank. Underground storage tank owners are exempt from this requirement if they meet the exemption criteria contained in Section 2647 of this article.

(i) 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.

(j) 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.

Authority: H&SC 25288.2

Reference: H&SC 25282, 25284, 25284.1

Adopt new section to read:

2641. Monitoring Alternatives

(a) All owners of existing 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, ~~within the time allowed,~~ 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 ~~proposed~~ based on the specification contained in Subsection (d) of this section and shall approve the monitoring alternative if it ~~they~~ 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: (A) 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 Section 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 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 ~~for~~ 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 shall 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) Vadose Zone Monitoring, Soil Sampling and Underground Storage Tank Testing:

TABLE 4.1 MONITORING ALTERNATIVES*

ALTERNATIVE	METHOD	MINIMUM MONITORING FREQUENCY	REFERENCE SECTION	COMMENTS AND CONDITIONS PROHIBITING USE OF ALTERNATIVE*
1	Tank Testing	Monthly	Section 2643	None
2	Vapor or Other Vadose Zone Monitoring Method and Ground Water and Soils	Daily/Continuous	Section 2646	1. Must be able to do both vadose and ground water monitoring. 2. Ground water should normally be less than 100 feet deep to use this alternative. 3. Minimum number of ground water monitoring wells: a. Ground water equal to or less than 50 feet deep o Single or multiple tanks (all <1,000 gal, same or closley spaced excavations) - one downgradient 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 ≥1,000 gal, same or closely-spaced excavations) - four wells minimum, at least two of which shall be downgradient and the remainder equally spaced. Pipelines - additional wells, if 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
	and	Semi-annual	Section 2647	
	and	One-Time	Section 2645	

				downgradient well. o Pipelines - additional wells, if needed, by the local agency.
3	Vadose and Soils and Tank Testing	Daily/Weekly One-Time Annual	Section 2646 Section 2645 Section 2643	This alternative shall not be used when first ground water is less than 100 feet deep and: 1. First ground water has actual or potential beneficial uses (municipal, domestic, industrial, or agricultural supply); or 2. First ground water is hydraulically connected to ground water which had or potentially has beneficial uses.
4	Ground Water and Soils	Weekly One-Time	Section 2647 Section 2645	1. Use of this alternative shall be limited to the following situations: a. Perennial ground water is normally less than 30 feet deep, and 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 screened 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 Reconciliation	Daily	Section 2644	1. Must use approved meters for tank inputs and and withdrawals.

	and			2. Inventory reconciliation which exceeds an allowable measurement error plus 0.15 percent of throughput at any time during a 30-day period shall require further investigation:
	Tank Testing and Pipeline Leak Detectors -	Annual	Section 2643	
		Continuous		Tank Size / Allowable Measurement Error: <4000 — 25 gallons; 4000 to < 8000 — 50 gallons; 8000 to <12000 — 75 gallons; ≥12000 — 100 gallons
				3. Limited to motor vehicle fuels storage tanks.
6	Inventory Reconciliation and Tank Testing and Pipeline Leak Detectors and Soils and Vadose Monitoring or Ground Water Monitoring	Daily	Section 2644	1. Must use approved meters for tank inputs and withdrawals.
		Annual	Section 2643	2. Inventory reconciliation which exceeds any of the following shall require further investigation: a. Daily variation - ≥100 gallons; b. Weekly variation - ≥5 percent of throughput but no greater than 350 gallons; c. Monthly variation - ≥0.5 percent of throughput no less than 100 gallons
		Continuous		
		Variable	Section 2646	3. Minimum number of ground water wells--See Alternative No. 2.
		Variable	Section 2647	4. Limited to motor vehicle fuels storage tanks.
7	Tank Gauging and Tank Testing	Weekly	Section 2644	1. This alternative is limited to use on small tanks that normally do not have any input or withdrawals (e.g., standby generator fuel supply) and where the 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 50 gallons, whichever is less shall be cause for further investigation.
		Annually	Section 2643	

8	Tank Testing and Inventory Reconciliation or Tank Guaging	Annually Daily Daily or Weekly	Section 2643 Section 2644 Section 2644	1. This is an interim monitoring alternative that can be implemented for up to three years. 2. Inventory reconciliation shall utilize approved meters for inputs and withdrawals and shall maintain variations within the limits specified in Alternative No. 6. 3. Tank gauging is 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.

* *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.

(A) This monitoring alternative shall, at a minimum, include vadose zone monitoring and analysis of soil samples taken at the time from the boring(s) made for vadose zone monitoring, and tank testing. ~~are installed~~ This alternative shall not be approved if first ~~perennial~~ ground 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 water 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) ~~(1)~~ of Section 2648 of this article or by evidence based on an evaluation pursuant to Subsection (p) of Section 2648 of this article. ~~records of existing nearby wells or borings that first ground water is significantly deeper than 100~~

~~feet.~~

(C) 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. ~~either continuously or daily~~ 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

soils 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:

(i) ~~Perennial~~ First ground water including intermittent, perched ground water is normally greater than 30 feet deep;

(ii) The ground water ~~being~~ 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

(iii) The ground water monitoring well cannot be ~~screened~~ 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 no. 4. Analysis of samples collected ~~and~~ 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 laboratory analysis if the visual observation or field analysis do 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 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, 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.

(ii) If the ~~calculated~~ variation is based on 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.

(iii) If the ~~calculated~~ variation is based on the previous day's calculated inventory, then 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 on which the physical inventory was used. ~~utilized the physical inventory.~~ The period of continuous calculations shall be no greater than 30 days.

(iv) The allowable variation shall be the sum 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 Measurement Error*
less than 4000	25
4000 to less than 8000	50
8000 to less than 12000	75
12000 or greater	100

* 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 (ii) or Subsection (iii) of this subsection. ~~Times .15 percent (.0015)~~

(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 a vusual or 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 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 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) 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

(ii) 7-day variation: ± 5% of throughput or 100 gallons which ever is greater but, in no case, greater thar 350 gallons

(iii) more greater than 30-day variation: ± 0.5% of throughput or 30-day variation 100 gallons whichever is greater

(C) Underground storage tank testing shall be performed yearly at a miniumum according to the procedures specified in Section 2643 of this article.

(D) All pressurized pipelines and suction pipelines shall be monitored as provided for in subsection (d) of Subsection (5) 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 based on the number and proximity of monitoring locations to the underground storage tank and type of sampling and analysis; however, in no case shall monitoring be no less frequent than semi-annually.

(F) Ground water monitoring, if used, shall be 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.

(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 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 measuring level highest in 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:

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals;

(ii) Tank liquid level measurements shall be 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

(iii) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article.

(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 ~~ALTERNATE~~ Monitoring

(A) 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 ~~BE USED BY~~ any of the following catagories of owners for a period of up to 3 years after the effective date of these regulations.

(i) 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 agency that sufficient funds will be

available to property close the underground storage tank pursuant to this Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection within the 3-year period; or

(ii) 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 [illegible] the underground storage tank can be 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 allowing the implementation of this monitoring alternative for longer than 3 years and shall not renew the permit.

(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 allowing the implementation of this monitoring alternative 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.

(C) 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 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.

(B) Underground storage tank gauging shall be performed according to the specifications of Subsection (e)(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:

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

(2) ~~In cases~~ Where the underground storage tank is in an ~~recharge~~ 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) ~~Furthermore~~ In addition, ground water monitoring 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 100 feet deep~~ 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 25299.2

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 ~~or a portion of the~~ exterior surfaces of an underground storage tank ~~All owners of existing underground storage tank owners shall implement visual monitoring for any 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 any one of the following conditions are met~~ The owner is exempt from ~~implementing~~ visual monitoring for that portion to the underground storage tank to which the following conditions apply.

(1) ~~An owner may be exempted from visually 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. An underground storage tank in a saddle should not typically

qualify for an exemption.

(2) ~~If the act of~~ Visual inspection ~~the~~ exterior of the underground storage tank would put a person in a physically unsafe environment.

(3) ~~If a person would be required to use~~ 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.). ~~In order to visually inspect all or a portion of the entire 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 for routine direct visual inspection of all accessible exterior surfaces of an underground storage tank and the horizontal surface ~~of the~~ floor 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.

(3) 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 ~~at a routine visual at least one inspection shall be performed~~ when the liquid ~~level~~ in the underground storage tank is at its highest level. The inspection frequency shall be ~~required~~ 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 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 liquid which shall include minimum levels of detection.

(2) Testing of the underground storage tank utilizing the procedures described in Section 2643 ~~2642~~ 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 ~~the other~~ monitoring alternative specified ~~methods described~~ in Section 2641 this article.

Authority: H&SC 25288.2

Reference: H&SC 25284.1, 25284.2

Adopt new section to read

2643. ~~2642~~ 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 subchapter~~ shall ~~except as~~ provided in ~~subsection (b) of this section~~ implement a testing program pursuant to Subsections (b) ~~(c)~~ through (g) ~~(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 conditions described in subsection (c) of this section cannot be performed within any significant exemption;~~

(b) ~~(1)~~ Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance ~~(as of)~~ at a rate of ~~(not)~~ 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 ~~(between 25 and)~~ 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 ps. (260 mm Hg) but greater than zero 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 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 ~~(in subsection (b) 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.

(d) Underground storage tanks shall be tested according to one following schedules:

Category A: Unlined steel tanks without corrosion protection - within one year of permit issuance and yearly beginning ten (10) years after tank installation;

Category B: Corrosion resistant tanks (1) - within one year of permit issuance and yearly beginning fifteen (15) years after tank installation;

(1) Common corrosion resistant tanks include fiberglass reinforced plastic (FRP); cathodically protected steel; and FRP-clad steel tanks;

(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.

(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 at a rate greater than or equal to 0.05 gph shall be repaired or replaced as specified in Articles 6 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 at 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 subsection (e)(1) above

(h) Underground storage tanks or pipelines containing

~~flammable or combustible liquids shall not be pressure tested using air or other gases.~~

~~(h) All pressurized 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 flow to no more than 50 percent of the minimum flow under non pressure loss situations (i.e., normal operations).~~

Authority: H&SC 25288.2

Reference: H&SC 25284, 25284.1, 25284.2

Adopt new section to read:

2644. ~~2643~~ Inventory Reconciliation ~~Control~~

(a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies inventory reconciliation ~~subject to this subchapter~~ shall ~~exceed~~ as provided for in ~~subsection~~ (b) ~~(h)~~ of this section implement an inventory reconciliation ~~control~~ program as described in Subsections (b) ~~(d)~~ 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 25281.2~~ of the Health and Safety Code.

~~(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 subject to accepted technological availability criteria.~~

(b) ~~(d)~~ All underground storage tanks shall be individually monitored utilizing a daily inventory reconciliation ~~control~~ system that takes into account: separate daily underground storage tank quantity measurements for both

the stored hazardous substance tank contents 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. Delivery records for underground product and daily wholesale meter delivery records for incoming product. Underground storage tank input meters shall be calibrated within the accuracy required for meters used for wholesale transactions in California. Meters for underground storage 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 Weights and Measures.

(c) For the purpose of this section, "daily" shall be defined as at least 5 days per week. During which inputs or withdrawals are made to or from the underground storage tank. This shall be a minimum of 5 days per week. This minimum may be reduced during weeks that a day public holiday occurs that fall on Monday through Friday. Provided no inputs or withdrawals are made on the holiday. 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 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) Capable of measuring to one-eighth of an inch;

(2) Performed during periods of no when no additions or withdrawals are being made to the underground storage tank. additions or withdrawals

(3) Performed by the underground storage tank owner, operator, or other designated managerial personnel who have had appropriate training;

(4) Based on the average of two readings if stick or tape gage measurements are used;

(5) Capable of detecting a water layer at the bottom lowest end 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) [6] 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 [initial] measurement at both ends, if possible, to determine if any underground storage tank tilt exists and, if so, its magnitude; and

(6) [7] Converted to volume measurements based on a calibration chart provided by the underground storage tank 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.

[d] [Monthly mass meter deliveries delivery records 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 reconciliation

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 actual meter totalizer reading[s] 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 actual 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 or decrease in the volume of product 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 one-half percent of the delivery volume or 100 50 gallons shall be cause for a reevaluation of the

measurements. This reconciliation shall initially include collection of the information required in Subsection (e)(2) of this Section.

(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 be investigated according to the methods and time schedules provided for in Subsection (f) of Section 2634 of Article 7:

(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) Cumulatively reconciled 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.

(e) (f) The owner or operator shall, on a quarterly basis, submit a statement to the local agency, under penalty of perjury, that the data and that either: the data is within allowable variations; or a listing of the dates and variations that exceed the allowable.

(f) If inventory reconciliation indicates a loss of the 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; 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 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 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. ~~Inventory control and~~ 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 t least 8 hours

after the inventory reconciliation which triggered this evaluation. This shall be completed within 24 hours of the conclusion of Subsection (f)(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 (f)(3).

(5) All dispenser meters associated with hazardous substance withdrawal shall be checked for calibration 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 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) 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, 25284.1

Adopt new section to read:

2645. ZZZZ 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 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 subject to this subchapter shall implement an evaluation as described in Subsections (b) (c) through (n) (c) 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 if any of the following situations exist and if they are confirmed by the local agency:

(1) Proximity to physical obstructions prevents the positioning and operation of drilling equipment within a horizontal distance of 15 feet from the tank;

(2) Soil conditions present drilling by any generally existing technique.

(c) At least one static water level in drilled or bored wells shall be recorded at the time of completion or abandonment of the boring. If static water level cannot be determined by the end of the boring, then a record of the depth to water and time of each reading shall be made and recorded with the boring log. Water level measurements of monitoring wells shall be recorded to the nearest 0.01 foot relative to mean sea level.

(d) At least one soil sample from each boring shall be recovered at or immediately above the seasonal high water level, at the capillary fringe, at any soil strata showing significant visual contamination, at the bottom of the boring, and at changes in lithology. Additional soil samples shall be collected for every 5 feet of vertical continuous boring unless otherwise specified by the local agency. Cuttings shall be monitored with an organic vapor meter or equivalent device.

(e) Soil samples shall be obtained from the boring(s) according to the following procedures:

(1) Undisturbed soil samples shall be obtained at a vertical interval of not greater than 5 feet beginning at the ground surface and proceeding to the target depth of the boring or to the ground water level in boring (whichever occurs first).

(2) The soil samples shall be collected, transported, stored, and analyzed according to approved EPA procedures.

(3) Analysis of the undisturbed soil samples shall be as follows:

(A) If more than one boring is utilized, samples from the same depth from each boring may be composited, if analytical procedures allow. Compositing of samples prior to analysis.

(b) Undisturbed (intact) soil samples shall be recovered from all borings used for the implementation 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.

(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 (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 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.

(i) Samples shall be prepared, stored, and transported by appropriate EPA methods or other similar or superior methods approved by the local agency.

(j) Samples shall be analyzed by field or laboratory methods that provide quantitative or qualitative results. If qualitative methods are used, then their lower detection limits shall be verified by the test manufcturer 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 ~~impact~~ interfer 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.

(l) ~~(B)~~ Samples may be analyzed in any order of depth. If levels of hazardous substances known or suspected to have been ~~to 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 ~~However,~~ the following ~~additional~~ ~~analysis~~ will be required ~~(1)~~ 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 may 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 has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite ~~adequately monitored~~ with the presence of the hazardous substance already in the environment.

~~(ii) Further investigation will be needed to determine the magnitude and extent of any soil or ground water contamination and to the unauthorized release. This may include, but is not limited to, analysis of the remaining soil samples and/or ground water sampling and analysis.~~

~~(C)~~ 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 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.)

(3) All borings 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 engineering geologist.

(5) All wet zones above the free water zone shall be noted and accurately logged.

(m) (1) 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 abandon close the underground storage tank pursuant to Article 6 or 7 of this subchapter.

(n) (1) 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. 2643 or 2645 and an assurance monitoring

system shall be installed according to Section 2647.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new section to read:

2646. ~~2645.~~ Vadose Zone ~~Detection~~ 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 ~~subject to this subchapter shall,~~ except as provided in ~~subsection (b) of~~ this section implement the a vadose zone detection monitoring system pursuant to Subsections (b) ~~(c)~~ through (h) of this Section.

~~(b) Owners of existing underground storage tanks are exempted from implementing a vadose zone monitoring system 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., monitorability) of the hazardous 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 being stored is not susceptible to detection by vadose zone monitoring methods;~~

~~(4) Visual monitoring of the entire tank pursuant to Section 2643 of this Article has been implemented.~~

(b) ~~(c)~~ Vadose zone monitoring shall ~~may~~ consist of vapor monitoring, ~~or~~ soil-pore liquid monitoring, or other forms of vadose zone monitoring. ~~Or a~~ Combinations of these ~~both~~ methods may be used.

(c) Wells for vapor monitoring shall be fully perforated except for that portion opposite adjacent to a surface seal and that portion of the bottom of a well where a plugged, blank segment section 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. ~~If possible~~

(f) Vapor monitoring for underground storage tanks ~~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 monitoring 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 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 ~~idéal~~ 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 ~~vaporing~~ monitoring wells placed in the backfill shall be constructed so that any ~~leakage~~ unauthorized release that may pond at the horizontal interface between the backfill and natural soils ~~soils~~ can be detected 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 system. *Using a soil-pore liquid 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.

(h) Vadose zone monitoring shall be conditioned where feasible and connected to an above-ground alarm system where conditional monitoring is unfeasible. Monitoring shall be performed weekly.

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new Section to read:

2647. 2SH6/ Ground Water Leak Detection 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 subject to this Subchapter shall except as provided for in Subsection (b)(c) through (j) (f) of this section implement a ground water leak detection monitoring system pursuant to Subsections (b)(c) through (j) (f) of this section.

(b) Owners of existing underground storage tanks are exempted from implementing a ground leak detection monitoring 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 2SH7 of this article have been implemented;

(2) A vadose monitoring system pursuant to Section 2SH5 of this Article has been implemented and ground water is and will remain at least 5 feet below the invert of the underground storage tank;

(3) The 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 those 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 Section 2SH7 during 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 drainage water monitoring network shall be designed and constructed according to the following criteria:

(i) Three groundwater monitoring wells shall be positioned downgradient and upgradient of the storage area to facilitate the sampling of water to and from the storage area. Additional wells may be required if, in the opinion of the Director, the groundwater flow direction is complex or if the facility has more than one storage area.

(ii) One of the monitoring wells shall be located in the most upgradient position to represent the background quality of the groundwater entering the facility.

(f) The groundwater monitoring wells shall be

constructed in such a manner that the physical integrity of the wells is maintained throughout the sampling period.

(g) All wells shall be protected from damage by vehicles and other hazards.

(h) All wells shall be provided with a suitable, lockable cap or cover.

(i) The groundwater monitoring wells shall extend to a depth at least 1 metre into the first impervious clay layer below the base of the waste disposal area.

(j) The groundwater monitoring wells shall be positioned so that the base of the well screen is located at least 1 metre above the seasonal high water table.

(k) Groundwater samples shall be collected from the wells using a method approved by the Director.

(l) Sampling and testing of groundwater samples shall be carried out in accordance with Section 2B02 of this Article.

(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 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 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 point 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. The 10-foot requirement may be waived by the local agency when the highest anticipated ground water elevation is less than 10 feet deep

(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 screens 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 nominal inside diameter of the casing.

(i) 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 Section 2510 (b) and (c) of the regulations

Authority: HRSA 2210(a)

Implements: HRSA 2320(a)

Adopt new Section to read:

2510Z Appropriate Ground Water Monitoring

(a) All owners of existing underground storage tanks subject to this subchapter shall, except as provided in subdivision (b) of this Section, implement an appropriate ground water monitoring system pursuant to subdivisions (c) through (g) of this Section

(b) Owners of existing underground storage tanks are exempted from implementing an appropriate ground water monitoring system if they demonstrate to the local agency that the following conditions apply:

(1) Ground water monitoring pursuant to Section 2510 of this Article is not the principal means of that determination

(2) The highest ground water level possible during the life of the facility is at a depth greater than 20 feet

(3) Proximity to physical characteristics preserve the

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positioning and operation of drilling equipment within a horizontal distance of 300 feet of the bank of bank stabilized perimeter/

(h) Soil conditions prevent drilling by any generally existing technique/

(c) Reasonable ground water monitoring measures shall be undertaken according to the following criteria/

(1) At those underground tank facilities in which the highest anticipated ground water elevation is measured 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 2698(e)(1)(A)(ii) (1) through (5) of this Article shall be performed from 10 feet above the highest anticipated ground water elevation to the bottom of the well/

(d) In order to implement subsection (c) of this Section/ the depth to ground water must be approximately determined/ this shall be accomplished either by observation of the ground water depth in existing wells within 300 feet of the facility or

an exploratory boring conducted as follows/

(1) An exploratory boring shall be drilled in the anticipated downgradient location from the underground tank/ More than one exploratory boring may be required to characterize the conditions and the boring at least 5 feet below the anticipated depth of a large area/

(2) The exploratory boring may be of any diameter capable of allowing the determination of first water and the recovery of a representative soil sample/

(3) The exploratory boring shall be drilled by a dry drilling technique that permits the determination of soil type and first water/

(4) The exploratory boring shall be within 10 feet of the tank/ If ground impervious surface prevents drilling within 10 feet of the tank/ the boring shall be drilled as near as possible to the tank/ on further than 30 feet from the tank/

(5) The exploratory boring shall be of a

minimum depth of 200 feet if ground water is not encountered at a depth of less than 200 feet;

(c) if ground water is encountered within a depth of 200 feet, the exploratory boring shall be backfilled with impervious material to the ground surface or to the required depth of sealing as specified by the Director, and shall be plugged with cement grout;

(d) the exploratory boring shall be modified if necessary and constructed as a gravel-packed water well with a minimum 4" nominal diameter casing;

(e) 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 if the Director is notified of the discovery, whichever is lower;

(f) in the case of confined aquifers, the well shall extend to the bottom of the aquifer and be perforated from the top of the aquifer to the bottom of the well;

(g) if the exploratory boring does encounter water within a depth of 200 feet, the exploratory boring shall be backfilled and sealed with impervious material from the bottom of the boring to the ground surface;

(h) samples shall be collected from every five feet of the exploratory boring and analyzed for all constituents listed in the underground storage tank and tanker degradation or transformation products;

(i) samples shall be collected, stored, transported, and analyzed according to approved EPA methods;

Authority: H&SC 25288.2

Reference: H&SC 25284.1

Adopt new Section to read:

2648. General Well Construction and Sampling Methods

(a) Soil and water The sampling equipment and materials used to construct a well shall be compatible with the stored hazardous substance product and shall not donate, capture, mask, or alter the product constituents for which analyses will be made.

(b) Representative samples of all imported materials used for filter to gravel packs or 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 immediately after a boring is completed.

(d) All well casings, casing fittings, screens gravel packs and all other components that are installed in the well shall to be thoroughly cleaned before installation in the boring.

e. All soil and water samples shall be obtained before each sample is taken.

f. Drilling fluid conditioners shall be limited to inorganic, non-hazardous materials which conform to the provisions of Subsection (d) of this section. All additives used and the depth in which they were used shall are to be precisely accurately recorded precisely in the boring log.

(g) Representative samples of additives, cement, bentonite, and filter media grouts shall be retained for 90 days for possible analysis analyzed for contaminating or interfering constituents.

(h) All well 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.

(n) (j) All ground water moritoring wells shall be properly

a proprietary cap fitted until the discharge water contains not less than 10 ppm hydrocarbons.

(*) (k) Each well vault must be provided with a locking water-tight cap.

(l) (i) Well heads shall be enclosed in a surface security structure that will protect the wells 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. Wells within a secure facility

(k) (m) Pertinent well information including well identification, well type, well depth, boring and well casing diameters if more than one size is used, and perforated intervals 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.

(m) Initial borings or wells to determine the depth to ground water shall be capable of allowing the collection of undisturbed soil samples or shall utilize a dry

drilling technique that permits the detection of wet zones and first water/

(l) 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 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 shall 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.

(o) The need for surface seals for other types of vadose zone installations shall be determined required 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. Historic Highest anticipated ground water levels shall be determined by a review of all water level measurements on record for wells within ½ 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 3/ 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 exploratory 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, 5, 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 and 2648 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 Sections 2648(q) and (s) of this article.

(q) All borings that are not used for ground water or vadose zone monitoring 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.

(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 method, drilling shall be halted until the responsible professional determines if drilling deeper is advisable.

Authority: H&SC 25288.2

Reference. H&SC 25284.1

Article 5. Release Reporting Requirements

Adopt new section to read:

2650 Applicability

(a) All unauthorized releases from the primary or secondary container ~~must~~ ~~be~~ ~~the~~ shall be reported ~~reporting~~ according to the ~~timing~~ ~~and~~ ~~distance~~ requirements of the appropriate sections of Chapter 6.7 of Division 20 ~~25281.3~~ ~~and~~ ~~25283.1~~ of the Health and Safety Code and this article. ~~section~~

(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 monitoring 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.

~~(b)~~ ~~All unauthorized releases shall be reported the same~~

and timing of 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:

(a) Unauthorized releases requiring only initial recording with reporting completed as part of the normal operating reports are defined in Section 2653 of this article:

(b) (1) All other unauthorized releases requiring immediate reporting shall be reported within 24 hours after the release has been, or should have been, detected according to are defined in Section 2654 of this article.

Authority: H&SC 25223, 25244

Reference: H&SC 25234, 25235, 25244

5.2

Adopt new section to read

2653. Unauthorized Release Requiring Recordkeeping.

(a) The report required by Subsection (b) of Section 2650 of this article shall include:

(1) A recordable unauthorized release is any unauthorized release of a hazardous substance which meets all the following criteria:

(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;

5.3

~~(b) All recordable unauthorized releases shall be contained and the released hazardous substance shall be safely transported 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 substances released.

(2) Method of cleanup. ~~and cost~~

(3) Method and location of disposal of the released hazardous substances (indicate whether a ~~manifest~~ copy of 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, ~~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 number.

(7) The ~~appropriate~~ estimated approximate costs for cleanup to be submitted voluntarily.

(b) ~~(d)~~ The local agency shall review the information 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 continue to be achieved or the local agency shall revoke the permit until appropriate modifications are made to allow compliance with the standards.

(c) ~~(d)~~ 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) (e) If a recordable unauthorized release becomes a reportable unauthorized release (e.g. 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 25284.2

Reference: H&SC 25284.3

Adopt new section as follows:

2672. Unauthorized Releases Requiring Immediate Reporting

(a) All other 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 any of the following criteria:

(A) The released hazardous substance escapes from the secondary container such that a secondary containment exists;

(B) The released hazardous substance increases the hazard of fire or explosion;

(C) The released hazardous substance causes any deterioration of the secondary containment;

(2) An unauthorized release of a hazardous substance

~~that occurs from an underground storage tank that does not have a secondary containment. This includes unauthorized releases from pressurized piping which is monitored by a pressure loss detector as described in Article 3, Section 2637, 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, using required monitoring, the operator ~~of permitted~~ shall notify the local agency and the State Office of Emergency Services or the ~~and~~ regional board ~~Regional Water Quality Control Board~~.

(c) Within 5 working days of detecting the release, ~~described~~ 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 clean-up actions~~

(4) Method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water (~~include~~ indicate whether ~~a copy of~~ hazardous waste manifest[s] is ~~if~~ 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) ~~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 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 local agency or Regional Board to the local agency and the regional board. The reports shall include the information requested in subsections (e)(2), (e)(3), and (e)(4) of this Section.

(d) The local agency shall review the permit whenever there has been an unauthorized release or 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 method of construction, the nature 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 availability of any other long-term preventive measures.

(e) (f) 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.

(g) The local agency, Regional Board, and Department of Health Services or other governmental agency may,

pursuant to other laws or regulations, require the permittee to investigate the extent of soil, groundwater or surface water contamination that resulted from the unauthorized release and to implement appropriate remedial action.

Authority H&SC 25283.2

Reference H&SC 25281.4

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 ~~to allow the use of~~ interior coating process ~~of hazardous substance underground storage tanks in order to repair the underground storage tank~~ 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 25288.2

Reference: H&SC 25284.4

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~~ Failure to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below shall be grounds ~~for denial~~ 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) ~~If interior lining 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) Certification 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 steel area. Undergrund storage tanks that have any of the following defects shall not be certified or returned to service.

(i) An underground storage tank which has an open seam or a split longer than 3 inches.

(ii) 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.

(iii) An underground storage tank with 5 or more perforations in any 1 square-foot area and any 1 perforation is none larger than 1/2 inch in diameter. In any 1 square-foot area

(iv) An underground storage tank with 20 or more perforations in a 500 square-foot area and any 1 perforation is none 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).

(c) If inspection timing is the proposed repair method, a demonstration that the secondary containment may not have released from any one or more of the following conditions shall be met:

(1) a liquid depth of more than three (3) inches;

(2) a single hole with a diameter of greater than one and one-half (1-1/2) inches;

(3) more than ten (10) small perforations;

(4) any failure or opening within six (6) inches of any

~~scan or nail.~~

~~(d) If interior lining or plate replacement of a fiberglass or steel underground storage 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~~ one of the tests in (c) above that a serious corrosion problem does not exist. If a serious corrosion problem exists, an interior lining 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.

Authority: H&SC 25284.2

Reference: H&SC 25284.5

Adopt new section to read:

2662. Repair Methodology

(a) If an interior lining of an underground storage tank ~~repair~~ 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. ~~An example of such a practice is the American Petroleum Institute's recommended practice No. 1631.~~

(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.

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 2.4.1.3 of the Flammable and Combustible Liquids Code adopted by the National Fire Protection Association on November 20, 1981 (NFPA 30-1981).*

(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. *Described in the applicable sections of ANSI B31.1 American National Standard Code of Pressure Piping or*

National Fire Protection Association Flammable and Combustible Liquids Code (NFPA 30)

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.

(b) The temporary closure requirements of Section 2671 of this article shall apply to those underground storage tanks in which the storage of hazardous ~~Hazard~~ substances ~~materials~~ 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. ~~materials~~ 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 ~~material~~ 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 ~~materials~~ 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. ~~materials~~

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous 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 Article 3 or 4 of this subchapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance ~~waste~~ storage and actual completion of underground storage tank closure pursuant to Sections 2671 or 2672 of this article, the applicable containment and monitoring requirements of Article 3 or 4 of this subchapter shall continue to apply.

(f) ~~At least 45 days~~ Prior to closure, ~~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 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.

(g) Underground storage tanks that have experienced an 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 ~~that~~ would allow the underground storage tank to be capable of storing hazardous substances ~~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 article ~~subchapter~~.

Authority: H&SC 25288.2

Reference: H&SC 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. as follows:

(A) product is legally stored for future use or handled as a hazardous waste;

(B) hazardous waste is legally recycled or disposed of as a hazardous waste;

(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 completely 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 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 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 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) 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 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, ther 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 beer 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

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 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 closed 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 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: Subdivisions (1) and (2) and either Subdivisions (3), (4), or (5) as appropriate

(1) All residual liquid, solids, or sludges shall be removed. and handled as follows:

(A) Presently legally stored for future use or

handled as a hazardous waste

(B) Hazardous waste illegally received or disposed of as a hazardous waste

(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 completely 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, that is destined for disposal shall be handled, 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 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. comply with all of the following:

(A) Reuse shall not be inconsistent 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

(B) 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 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. 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)(1) of this Section:

(A) The tank system shall be thoroughly cleaned;

(B) The tank system shall be cut or punctured 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 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 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 hazardous waste;

(2) All piping associated with the underground storage tank shall be removed Handled 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 hazardous waste;

(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, that cannot be removed, such as sand or concrete 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 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 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, then soils sampling pursuant to Section 2645 [illegible] 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: H&SC 25288.2

Reference H&SC 25286

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 the requirements ~~set forth in~~ 25288 and 25289 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 section of Chapter 6.7 of Division 20 of the Health and Safety Code. ~~25288(a)(5) and (6)~~

(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: H&SC 25288.2

Reference: H&SC 25288.3

Adopt new section to read:

2681. Categorical Variances

(a) 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 or a form provided by 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) 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 ~~local agencies 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 bill 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 decision on the application~~

(d) ~~(b)~~ 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) ~~(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).

(f) (e) 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) (f) 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. 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 in the mail at least 21 days in advance of the hearing.

(g) All hearings shall be conducted according to the requirements governing adjudicatory proceedings which are contained in Subchapter 115 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 this 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 will adequately protect the air and the beneficial uses of water of the state from an unauthorized release.

(h) (i) The decision of the State Board will be based on that evidence and testimony in the record of the hearing(s). 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 30 days,

to allow any interested person to file additional exhibits, reports, or affidavits.

~~(j) 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 8 of this Chapter shall apply.~~

(i) (k) 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.

(j) (l) 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) (m) 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 will not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and Subchapters 5 and 6 of this chapter. ~~outlined herein for approval of a categorical variance~~ The State Board shall notify all affected local agencies of the modification or revocation. It shall require the local agencies shall to modify or revoke all site permits which were based on the categorical variance.

Authority: H&SC 25288.2

Reference: H&SC 25288.3

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. ~~Facility location~~ 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.

(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 plan, 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 Quality 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.~~

(c) ~~(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) 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.

~~(B) Clear and convincing evidence demonstrating 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 would create practical difficulties not generally applicable to other facilities or property.~~

(3) Any special circumstances on which the applicant would rely to justify the findings necessary for the variance, as prescribed by the appropriate ~~subsection (e) of~~ section ~~25288.8~~ 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~~ ~~$7,750~~ 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) ~~(1)~~ 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) ~~(2)~~ 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 6.7 of Division 20 ~~subsection (e) of section 25288.8~~ of the Health and Safety Code for local agencies to join in the

application. described in subsection (a) of this section.

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 time, date and location of the hearing, and shall include a description of the proposed variance. When the notice is mailed, it shall be placed in the mail at least 10 days in advance of the hearing.

(e) All hearings shall be conducted according to the regulations governing administrative procedures which are contained in Subchapter 7.5 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 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.

(f) Any site-specific variance shall be issued will prescribe appropriate additional the conditions the applicant must maintain and shall 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.

(g) 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 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.

(i) The regional board shall modify or revoke a variance upon a finding that the proposed alternative does not

adequately protect the soil and the underlying zone of the water of the State from an unauthorized release. The regional board shall ~~will~~ not modify or revoke the variance until it has followed procedures comparable to those prescribed in this Section and Subchapters 15 and 2 of this chapter. ~~Additional Notice for Approval of a Variance~~ The regional board shall notify the local agency of the modification or revocation. ~~And shall require~~ The local agency shall ~~to~~ modify or revoke the permit for the site.

Authority: H&SC 25150 -

Reference: H&SC 25188.3

Article 9. Local Agency Additional Standard 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 2 and 4 of this subchapter. These procedures are in addition to those established by Chapter 6.7 of Division 20 ~~Underground~~ ~~Storage~~ of the Health and Safety Code.

Authority: H&SC 25299.2

Reference H&SC 25188.3

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.

(2) 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 (Division 13, commencing with Section 21000 of the Public Resources Code).

(4) ~~A fee of $11,500~~ An 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 hearing 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 notice and other procedural requirements contained in Sections (a) through (j) of Article 8 of this subchapter shall apply.~~

~~(d) 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.~~

~~(e) 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.~~

~~(f) Should the board not authorize the local agency to implement additional standards, the additional standards will not go into effect.~~

(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 adequately 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. ~~Additional hearing for issuance of the authorization.~~

Authority: H&SC 25288.2

Reference: H&SC 25288.3

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 ~~Sections 25283, 25283.1, 25283.2, 25283.4, 25283.5, 25283.6, and 25284.2~~ 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. ~~and the requirements for the local agency to submit the permit application to the State 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 both tank owners and local agencies.

(e) Section 2714 of this article specifies conditions that 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 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

~~(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.

(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, corporation or public agency which owns the underground storage tank or tanks.

(2) The name, location, mailing address, and phone number and type of facility 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 ~~description~~ 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 Section 2631 (c) and (j)(1) and (2) of Article 3, or if applicable, Section 2633 (e)(1) and (2) of Article 3, and a certification by the membrane liner fabricator that the membrane liner meets the standards set forth in Section 2631(c) and (j)(3) of Article 3.

(7) ~~(B)~~ ~~The underground storage tank (tanks), piping and auxiliary equipment~~ 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 and backfill, lining, wrapping, and cathodic protection methods (if applicable).

(3) ~~(A)~~ 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) ~~(B)~~ The description 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) Invertory reconciliation ~~controls~~ 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) ~~(9)~~ A list of all the substances which previously, currently, or are proposed to be stored in the underground storage tank or tanks.

(11) ~~(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 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 principal 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 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 regulatory bd to cover the costs of State Board in carrying out its responsibilities under these regulations.~~

Authority: H&SC 25288.2

Reference: H&SC 25283.2

Adopt new section to read

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 the permitting authority within at least 30 days after prior to the change any changes in the usage of any underground storage tanks, 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 releases 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, of State Board or duly authorized representative upon demand during any site inspection. Monitoring records ~~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 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) ~~(e)~~ 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, ~~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 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 receiving the ownership transfer request.

(f) If an underground storage tank does not completely conform with Articles 3 or 4 of this subchapter, 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 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 subchapter or is closed pursuant to Article 7 of this subchapter. These time schedules shall not exceed beyond the duration of the provisional permit. A provisional permit will be issued for no longer than one year with a one-time extension of six months. Three months may be removed or extended. The local agency shall inspect the underground storage tank pursuant to the provisions of subsection (g) of this section within 60 15 days of the expiration of the provisional permit to assure that the permit conditions have been met.

(g) The 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, as applicable, 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. 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 before renewing the permit.

(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 listed 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 materials shall be filed with the local 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.

(i) The purpose of the inspection described in subsection (h) 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 permit; and

(3) Determine whether the underground storage tank is in a safe operating condition.

(h) (1) (A) 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, 25283.1, 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) ~~(d)~~ 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. This 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. 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 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 ~~identify~~ 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

(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 ~~will~~ 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 frivolous, 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 not clear~~ is unclear, the local agency, 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 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 regional board shall then evaluate the request on the ~~an~~ ~~case~~ basis of the definition of "trade secrets" contained in the

appropriate Section of Chapter 6.7 of Division 20 ~~Section 25283(b)(2)~~ 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 ~~will~~ act in accordance with Subsection (c) of this section. ~~Send a letter to the applicant stating that the local agency or the State Board or Regional Board will treat the information as such unless the local agency or the State Board or Regional Board is instructed otherwise by a court within 10 days of the date of the letter.~~

(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.

(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 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 ~~waive~~ prevent ~~prevention~~ of disclosure of information pursuant to other provisions of law.

Authority: H&SC 25288.2

Reference: H&SC 25283.6

APPENDIX I, TABLE A
SUGGESTED SPECIFICATIONS APPLICABLE TO REGULATORY REQUIREMENTS

SECTION NUMBER		
2631(j)(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 Thermoplastic Containers"
2635(b)(1)	ASME,	"ASME Pressure Vessel Code, Section VIII, Division I, Boiler and Pressure Vessel Code"
	UL58,	"Steel Underground Tanks for Flammable and Combustible Liquids"
	UL1316,	"Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products"
	ULC-3615-1977,	"Standard for Reinforced Plastic Underground Tanks for Petroleum Products"
2635(b)(2)	ASTM 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 TM-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

State of California

Memorandum

To : Linda Stoltdale Brewer, Director
Office of Administrative Law
1414 K Street, Suite 600
Sacramento, CA 95814

Date : MAR 1 1985

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 ADMINISTRATIVE 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 tank construction and closure, monitoring alternatives, performance standards for underground storage tank 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, 1984, 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 tank 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 Board also has the statewide underground storage container inventory from which underground storage tank owners can be notified. Local agencies have the means to notify underground storage tank owners 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, 1985. 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
Mike Campos
Walt Pettit
Bill Attwater

DWQ/pd

STATE OF CALIFORNIA
STD. 400 (7-82)

(See instructions on reverse)

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
(Agency)

By: _____
(Agency Officer with Rule-making Authority)

Michael A. Campos, Executive Director

(Date)

LEAVE BLANK

LEAVE BLANK

AGENCY CONTACT PERSON AND POSITION

TELEPHONE

John W. Richards, Staff Counsel 322-7732

2. Indicate California Administrative Code Title and specify sections to be amended, adopted, and/or repealed:

Title: 23

SECTIONS AMENDED

SECTIONS ADOPTED

2610-2714

SECTIONS REPEALED

3. Type of Order:

a. [x] Regular b. [ ] Emergency (Attach Finding of Emergency)

c. Other Regulatory Actions:

[ ] Certificate of Compliance [ ] Procedural and Organizational Changes [ ] Editorial Correction [ ] Authority and Reference Citation Changes

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.)

[ ] All [ ] Some [x] None

e. Is this order a resubmittal of previously disapproved or withdrawn regulations?

[ ] Yes [x] No

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 [x] 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.

b. [ ] Effective on _____ 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).)

[x] Required statement attached (See cover letter)

d. [ ] Effective on _____ (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 for filing with the Secretary of State.

Part 1. Provide agency/department name, the signature of the agency officer with rule-making authority, and the date of submittal. Provide also the name of the agency contact person and agency telephone number.

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

III.B.6.k

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 85- 6

ADOPTION OF REGULATIONS GOVERNING STORAGE OF HAZARDOUS SUBSTANCES IN UNDERGROUND STORAGE TANKS TO BE CODIFIED IN SUBCHAPTER 16 OF CHAPTER 3 OF TITLE 23 OF THE CALIFORNIA ADMINISTRATIVE CODE (23 CAC SECTIONS 2610-2714)

WHEREAS:

1. Chapter 6.7 (commencing with Section 25280) was added to Division 20 of the Health and Safety Code by Chapter 1046 of the Statutes of 1983 (AB 1362, Sher).

2. Chapter 6.7 establishes standards for construction, repair, closure, and monitoring of underground storage tanks used for storage of hazardous substances and requires reporting of unauthorized releases. Chapter 6.7 was amended and reorganized by Chapters 1038, 1537, and 1584 of the Statutes of 1984 (AB 3565, 3447, and 3781, Sher).

3. Sections 25299.3 of the Health and Safety Code directs the State Board to "develop regulations implementing the standards of Sections 25291, 25292, 25294, 25295, 25296, 25298, and 25299.4" by January 1, 1985.

4. Section 25299.3 of the Health and Safety Code authorizes the State Board to develop regulations implementing Sections 25287, 25290, and 25293.

5. A Notice of Proposed Rulemaking describing proposed regulations governing underground storage tanks was published in the California Administrative Notice Register on August 24, 1984. Over 2,000 copies of the notice, and over 2,000 copies of the proposed regulations and Initial Statement of Reasons were distributed to interested persons and organizations.

6. 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 on October 23, 1984 and a workshop on November 2, 1984 to hear testimony and discuss the comments of interested persons. Over 150 persons submitted written comments and 36 persons testified at the hearing.

8. Text of the proposed regulations, as modified to reflect many of the comments received, was made available to the public on November 9, 1984 and additional comments were solicited. The State Board held a second public hearing on November 27, 1984.

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 Director 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 Board held on January 18, 1985.

Michael A. Campos
Executive Director

c. Text of draft regulations adopted by the SWRCB on January 18, 1985

Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations 1985

UNDERGROUND TANK REGULATIONS

CALIFORNIA ADMINISTRATIVE CODE
TITLE 23 WATERS
CHAPTER 3 WATER RESOUORCES CONTROL BOARD
SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

JANUARY 18, 1985

CALIFORNIA ADMINISTRATIVE CODE
TITLE 23 WATERS
SUBCHAPTER 16 UNDERGROUND TANK REGULATIONS

TABLE OF CONTENTS

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 2611 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 repair requirements of Article 6 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) 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, implements the requirements of Subchapter 6.7 of Division 20 of the Health and Safety Code pertaining to construction and monitoring 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

(B) 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

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

Hazardous substance

Local agency

Operator

Owner

Person

Pipe

Primary containment

Product-tight

Secondary containment

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 fabricated 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: H&SC 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.

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.

(g) 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.

(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 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 hours 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.

(l) 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.

(r) 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: H&SC 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 shall 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.

(1). Laboratory or field analysis of the

observed liquid.

(i.) Testing of the underground storage tank utilizing the procedures described in Section 2643 of Article 4 of this subchapter.

(iii) Removal of all hazardous substances from the underground storage tank and the secondary container (as specified in Subsection [d] of this section).

(2) A program which relies on detecting the hazardous 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 Hazardous Substances in the Secondary Container

Condition of the Secondary System [1]	Type of Substance Stored	Methods of Monitoring: Liquid Level Indicator [2]	Hazardous Substance Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
Dry	Volatile	X	X	X	X
Dry	Nonvolatile	X	X		X
Wet	Volatile	X	X	X	X
Wet	Nonvolatile	X	X		X

[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 "wet" 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:

(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.

(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 on-site, 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 article. If this section is used in lieu of Section 2631 of this article, then the 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

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.

(g) Pressurized piping systems that are connected to 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 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: H&SC 25299.3

Reference: H&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 substance 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:

(1) Cathodically protected steel underground storage tanks, steel underground storage tanks clad with glass fibre-reinforced 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 history 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 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.

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.

(7) Before being covered, enclosed, or placed in use, all 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 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 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 gauging; or

(C) The hazardous substance being delivered can be 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.

(7) 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. Applicability

(a) All owners of existing underground storage tanks subject to this subchapter shall implement 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 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 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. 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 existing 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 shall 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) Vadose 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*

ALTERNATIVE	METHOD	MINIMUM MONITORING FREQUENCY	REFERENCE SECTION	COMMENTS AND CONDITIONS PROHIBITING USE OF ALTERNATIVE*
1	Tank Testing	Monthly	Section 2643	None
2	Vapor or Other Vadose Zone Monitoring Method and Ground Water and Soils	Daily/Continuous Semi-annual One-Time	Section 2646 Section 2647 Section 2645	1. Must be able to do both vadose and ground water monitoring. 2. Ground water should normally be less than 100 feet deep to use this alternative. 3. Minimum number of ground water monitoring wells: a. Ground water equal to or less than 50 feet deep. o Single or multiple tanks (all <1,000 gal, same or closely spaced excavations) - one downgradient 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 ≥1,000 gal, same or closely spaced excavations) - four wells minimum, at least two of which shall be downgradient and the remainder equally spaced. Pipelines - *additional wells, if 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 and Soils and Tank Testing	Daily/Weekly One-Time Annual	Section 2646 Section 2645 Section 2643	This alternative shall not be used when first ground water is less than 100 feet deep and: 1. First ground water has actual or potential beneficial *uses (municipal, domestic, industrial, or agricultural* supply); or 2. First ground water is hydraulically connected to ground water which had or potentially has beneficial uses.

4	Ground Water and Soils	Monthly One-Time	Section 2647 Section 2645	1. Use of this alternative shall be limited to the following situations: a. Perennial ground water is normally less than 30 feet deep, and 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 screened 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 Reconciliation and Tank Testing and Pipeline Leak Detectors	Daily Annual Continuous	Section 2644 Section 2643	1. Must use approved meters for tank inputs and and withdrawals. 2. Inventory reconciliation which exceeds an allowable measurement error plus 0.15 percent of throughput at any time during a 30-day period shall require further investigation: Tank Size — Allowable Measurement Error ≤4000 — 25 gallons 4000 to ≤ 8000 — 50 gallons 8000 to ≤12000 — 75 gallons ≥12000 — 100 gallons 3. Limited to motor vehicle fuels storage tanks.
6	Inventory Reconciliation and Tank Testing and Pipeline Leak Detectors and Soils and Vadose Monitoring or Ground Water Monitoring	Daily Annual Continuous Variable Variable	Section 2644 Section 2643 Section 2646 Section 2647	1. Must use approved meters for tank inputs and withdrawals. 2. Inventory reconciliation which exceeds any of the following shall require further investigation: a. Daily variation - ≥100 gallons b. Weekly variation - ≥5 percent of throughput but no greater than 350 gallons c. Monthly variation - ≥0.5 percent of throughput no less than 100 gallons 3. Minimum number of ground water wells--See Alternative No. 2. 4. Limited to motor vehicle fuels storage tanks.

7	Tank Gauging and Tank Testing	Weekly Annually	Section 2644 Section 2643	1. This alternative is limited to use on small tanks that do not have frequent input or withdrawals (e.g., standby generator fuel supply) and where the 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.
8	Tank Testing and Inventory Reconciliation or Tank Gauging	Annually Daily Daily or Weekly	Section 2643 Section 2644 Section 2644	1. This is an interim monitoring alternative that can be implemented for up to three years. 2. Inventory reconciliation shall utilize approved meters for inputs and withdrawals and shall maintain variations within the limits specified in Alternative No. 6. 3. Tank gauging is 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.

* 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.

(C) 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:

(i) First ground water, including intermittent, perched ground water, is normally greater than 30 feet deep;

(ii) 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

(iii) 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 shall 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 underground storage tank that experiences a

inventory reconciliation in excess of allowable 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.

(ii) 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.

(iii) 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.

(iv) The allowable variation shall be the sum 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 Measurement Error*
less than 4,000	25
4,000 to less than 8,000	50
8,000 to less than 12,000	75
12,000 or greater	100

* 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 (ii) or Subsection (iii) 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 shall 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 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 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

(ii) 7-day variation: ± 5 percent of throughput or 100 gallons whichever is greater but, in no case, greater than 350 gallons

(iii) more than 30-day variation: ± 0.5 percent of throughput or 100 gallons whichever is greater

(C) Underground storage tank testing shall be

performed yearly at a miniumum according to the 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.

(F) Ground water monitoring, if used, shall be 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:

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals;

(ii) 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;

(iii) 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

(A) 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.

(i) 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 7 monitoring alternatives of this subsection within the 3-year period;

(ii) 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

(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 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.

(C) 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 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:

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

(2) 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.

(3) 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 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 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: H&SC 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 6 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: H&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.

(b) All underground storage tanks shall be individually 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; Subchapter 9, "Tolerances and specifications for commerical 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 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 inplement 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 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, 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 reconciliation 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 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.

(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*.

(i) Samples shall be prepared, stored, and transported by appropriate EPA methods or other similar or superior methods

approved by the local agency.

(j) Samples shall be *analyzed by field or laboratory methods* that *provide* quantitative or qualitative results. If qualitative methods are used, then their lower detection limits shall be verified by the test manufacturer 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.

(l) 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: H&SC 25299.3

Reference: H&SC 25292

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:

(1) Before any method of vapor monitoring 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 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) The 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 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 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.

(i) 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.

(i) 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 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.

(l) 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 6, 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 exploratory 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 monitoring 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 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.

(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 monitoring 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.

(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 disposal 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.

(b) 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 thickness of the underground storage tank:

(1) An ultrasonic test.

(2) Certification 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 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 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 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:

(i) An underground storage tank which has an open seam or a split longer than 3 inches.

(ii) 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.

(iii) 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.

(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 lining 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.

Authority: H&SC 25299.3

Reference: H&SC 25296

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:

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.

(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

Article 7. Closure Requirements

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.

(f) Prior to closure, 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 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.

(g) Underground storage tanks that have experienced an 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. 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 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 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 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 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, 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 Article 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 site-specific 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: H&SC 25299.3

Reference: H&SC 25299.4

Adopt new section to read:

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.

(i) 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.

(j) 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: H&SC 25299.3

Reference: H&SC 25299.4

Adopt new section to read:

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.

(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 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.

(f) Any site-specific variance shall prescribe appropriate 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.

(i) 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.

(2) Clear and convincing evidence that the additional 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.

(d) 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 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.

(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 description 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

Adopt new section to read:

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.

(g) The 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 then 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

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 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 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, the State Board, or the regional board may request. The local agency, the State 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 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.

(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 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

prevent disclosure of information pursuant to other provisions of law.

Authority: [illegible]

Reference: [illegible]