



Linda S. Adams
Secretary for
Environmental Protection

State Water Resources Control Board

Division of Water Quality

1001 I Street, Sacramento, California 95814 ♦ (916) 341-5866
Mailing Address: P.O. Box 2231, Sacramento, California 95812
FAX (916) 341-5808 ♦ Internet Address: <http://www.waterboards.ca.gov>



Arnold Schwarzenegger
Governor

March 25, 2008

LG 161-5 ENHANCED LEAK DETECTION

(Available electronically at <http://www.waterboards.ca.gov/ust>)

To: Local Agencies and Other Interested Persons

The purpose of this letter is to provide a general overview of the enhanced leak detection (ELD) requirements and to answer the most common questions regarding ELD that have arisen to date. This letter is intended as a working document and may be periodically updated as new information becomes available and as new questions arise.

What is ELD?

ELD is a test method that ascertains the integrity of an underground storage tank (UST) system by the introduction and external detection of a substance that is not a component of the fuel formulation stored in that UST system [Cal. Code Regs., Title 23, § 2644.1, subd. (a)(1)].

The ELD test method must be:

- Third-party certified; and
- Capable of detecting both vapor and liquid phase releases at a leak rate of at least 0.005 gallons per hour (gph), with a probability of detection of at least 95% and a probability of false alarm no greater than 5% [*Id.* § 2644.1, subd. (a)(2)].

Who is required to perform ELD?

Owners/operators of UST systems installed prior to July 1, 2003¹ and located within 1,000 feet of a public drinking water well must perform ELD [Health & Saf. Code, §§ 25292.4; 25292.5; Cal. Code Regs., Title 23, §§ 2640, subd. (e); 2644.1, subd. (a)(3)]. The State Water Resources Control Board (State Water Board) UST Program is responsible for notifying owners/operators of facilities that are subject to the ELD requirement.

- **What is a public drinking water well?** A “public drinking water well” is a wellhead that:
 - Provides drinking water to a public water system,²

¹ USTs installed on or after July 1, 2003 are those systems that are installed and monitored in accordance with Health and Safety Code, section 25290.1.

² A “public water system” is a system that provides water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year [Health & Saf. Code, § 116275].

- Is regulated by the State Department of Health Services (DHS); and
- Is subject to the notification requirements for wells found to have contaminants in excess of maximum contaminant levels or action levels established by DHS. [Health & Saf. Code, § 25299.97, subd. (a)(1)]

What is the deadline for performing ELD and how often does ELD have to be performed on a subject UST system?

For UST systems with a **single-walled** component, ELD must be performed no later than 18 months following receipt of notification from the State Water Board and be repeated every thirty-six (36) months thereafter [Cal. Code Regs., Title 23, § 2644.1, subd. (a) (3)].

- **What is a single-walled component?** A single-walled component is any part of a UST system that is constructed with walls made of only one thickness of material. Laminated, coated, or clad materials are all considered single-walled [Health & Saf. Code, § 25281, subd. (r)]. Tanks that were lined to meet the 1998 upgrade requirements are also considered to be single-walled. UST systems with any of the following components are considered “single-walled”: a single-walled tank, single-walled pressurized piping, single-walled conventional suction piping, a dispenser without under-dispenser containment, or a turbine that is not contained in a sump. However, single-walled vent or tank riser piping, vapor recovery piping, and “safe” or “European” suction piping are not considered single-walled components of UST systems if they meet the definition of section 2636 (a)(1), (2), or (3) [Cal. Code Regs., Title 23, § 2640, subd. (e)(1)]. UST systems with a single-walled component were typically installed on or before January 1, 1984, although some may have been installed between January 1, 1984 and July 1, 1987.

For UST systems with **secondary containment** that were installed before July 1, 2003 and are located within 1,000 feet of a public drinking water well, one-time ELD testing is required [Health & Saf. Code, §25292.5, subd. (a)].

- **What is an UST system with secondary containment?** An UST system with secondary containment has a second containment around all regulated single-walled components. An UST system with secondary containment at a minimum includes all of the following: a double-walled tank, double-walled piping (unless piping is “safe” or “European” suction), a turbine containment sump and under-dispenser containment. UST systems that meet the criteria of secondary containment were typically installed after July 1, 1987, although some may have been installed between January 1, 1984 and July 1, 1987.

In addition, Health and Safety Code, §25289, subdivision (b) authorizes the State Water Board to require ELD testing when the State Water Board finds that the burden of the testing, including costs, bears a reasonable relationship to the need for the testing and reporting. The State Water Board finds that the burden of imposing required ELD testing of USTs located within 1000 feet of a public drinking water well on owners or operators

not previously notified under other sections of the Health and Safety Code bears a reasonable relationship to the benefits to be gained from obtaining information about tank integrity. Information about tank integrity is needed so that leaking USTs can be identified. Therefore, owners/operators of UST systems not previously notified under other sections of the law, but which UST systems are found to be located within 1000 feet of a well, will be notified pursuant to section 25289, subdivision (b) and will be required to conduct testing within 18 months of notification.

ELD means a test method that ascertains the integrity of an UST system. Therefore, regardless of the UST system type (i.e., single-walled, double-walled, or hybrid³), the entire UST system (single-walled and double-walled) must be tested to fulfill the requirement.

What is the process for implementing ELD?

As described below, several groups are responsible for various aspects of the process for ELD implementation:

SWRCB UST Program Responsibility: The State Water Board UST Program is responsible for notifying owners/operators of UST systems within 1,000 feet of a public drinking water well that they are subject to the requirements of ELD [Health & Saf. Code, § 25292.4, subds. (a) and (b) §25292.5, subd. (b); §25289, subd. (b); Cal. Code Regs., Title 23, § 2640, subd. (e)]. The SWRCB UST Program is also responsible for considering requests for reconsideration from those UST owners/operators who believe their facility is not subject to ELD [Cal. Code Regs., Title 23, § 2640, subd. (e)(2)]. (See below for additional information on requests for reconsideration).

Owner/Operator Responsibility: Owners/operators of UST systems that meet the criteria for ELD must complete the following steps:

- **ELD Program Plan Approval:** Have a written program of ELD (testing program plan) reviewed and approved by the local agency within six (6) months following notification by the State Water Board UST Program [Cal. Code Regs., Title 23, § 2644.1, subd. (a)(3)].
- **ELD Test Implementation:** Implement the approved program of ELD (testing program plan) at their facility.
 - For UST systems with a single-walled component, ELD testing must be performed within 18 months following receipt of notification from the State Water Board UST Program and repeated every 36 months [Cal. Code Regs. Title 23, § 2644.1, subd. (a)(3)].
 - For UST systems without a single-walled component, upon written request by the SWRCB, one ELD test must be performed within 18 months from the date of notification [See Health & Saf. Code, § 25289(b)].
- **ELD Test Notification:** Notify the local agency at least 48 hours prior to conducting the ELD test unless this notification requirement is waived by the local agency [*Id.*, § 2644.1, subd. (a)(4)].

³ A hybrid UST system refers to a UST system comprised of both single-walled and double-walled components. Because they contain a single-walled component, hybrid UST systems that are subject to ELD must be tested within 18 months of notification and every three years thereafter, unless all regulated single-walled components are upgraded to double-walled [Cal. Code Regs., Title 23, § 2644.1, subd. (a)(1)].

- **ELD Test Result Submittal:** Submit the results of the ELD test to the State Water Board UST Program **and** the local agency within 60 days after the test has been performed [*Id.*, § 2644.1, subd. (a)(5)].

The address for submission of the ELD test results to the State Water Board UST Program is:

State Water Resources Control Board
Division of Water Quality
Attention: Kevin L. Graves, P.E., UST Program Manager
ELD Test Results
P. O. Box 2231
Sacramento, CA 95812

Local Agency Responsibility: The local agency is responsible for working with the tank owner/operator to approve the program of ELD (testing program plan) submitted by the owner/operator within six (6) months following notification by the State Water Board UST Program. The local agency also must follow-up on the ELD test results and oversee implementation of the recommendations in the ELD test report.

What should be included in the program of ELD (testing program plan)?

The written plan must include:

- A modification/amendment to the existing UST monitoring plan;
- Submittal of standard documentation describing the third-party approved process for implementation of the ELD requirement (often this is a generic document developed by the testing company); and
- A signed access agreement between the testing company and the owner/operator to have the ELD test completed on the proposed date that the ELD test will be performed.

A program of ELD does **not** require a site-specific plan developed by the testing company for each UST facility because ELD is a third-party certified UST system “test method” with specific testing guidelines that must be followed in order for the test results to be valid.

Which vendors are approved at this time to perform ELD?

At this time, we are aware of three vendors who meet all the regulatory criteria to perform ELD. The three vendors are Praxair Services, Inc., CGRS, Inc., and Leak Detection Technologies, Inc. CGRS is a licensee of Praxair Services, Inc.

Contact information for Praxair Services, Inc. is:

Praxair Services, Inc.
Attention: Anthony Ptak
3755 North Business Center Drive
Tucson, AZ 85705-2944
Phone: 1-800-394-9929 ext 234
E-mail: anthony_ptak@Praxair.com
Web: www.praxair.com/services

California Environmental Protection Agency

Contact information for CGRS, Inc. is:

CGRS, Inc.
Attention: Chris Murphy
5444 Dry Creek Road
Sacramento, CA 95838
Phone: 1-916-991-1100
E-mail: Info@CGRS.com
Web: www.CGRS.com

Contact information for Leak Detection Technologies, Inc is:

Leak Detection Technologies, Inc
Attention: David Rabb
1400 East Paseo Pavon
Tucson, AZ 85718
Phone: 1-520-207-4878
E-mail: info@leakdetect.net
Web: www.leakdetect.net

What is the request for reconsideration process for the ELD requirement?

An owner/operator who believes his/her facility is **not** subject to the ELD requirements may, in writing, request reconsideration by the UST Program Manager. A copy of the request must also be submitted to the local agency. The request must be received by the UST Program Manager within 60 calendar days from the date the State Water Board mailed the notification. The UST Program Manager must make a decision on the request and notify the applicable local agency of the decision within 90 calendar days of receipt of the request [Cal. Code Regs., Title 23, § 2640, subd. (e)(2) and (3)]. A “Request for Reconsideration Form” is included in the ELD notification packet sent to owners/operators of subject UST systems and is available on the State Water Board UST Program webpage at: <http://www.waterboards.ca.gov/ust>.

- **What must be included in the request for reconsideration?** The request must include, in writing:
 - The name and address of the subject facility;
 - The name and address of the owner/operator submitting the request; and
 - The reason(s) why the requester believes the State Water Board’s notification was in error. If the request is based on evidence that the UST system in question is greater than 1,000 feet from a public drinking water well, the request must include a demonstration that the center of the wellhead is more than 1,000 feet from the closest component of the UST system [Cal. Code Regs., Title 23, § 2640, subd. (e)(3)].

- **Owners/Operators should submit their request(s) for reconsideration to both their local agency at the appropriate address and to the SWRCB UST Program at:**

State Water Resources Control Board
Division of Water Quality
Attention: Kevin L. Graves, P.E., UST Program Manager
ELD Request for Reconsideration
P. O. Box 2231
Sacramento, CA 95812

- **What if the request for reconsideration is inadequate to make a decision?** Upon receipt of a request for reconsideration that does not include all of the required information, the UST Program Manager will advise the requester of the manner in which the request is incomplete and allow a reasonable time within which an amended request may be submitted. If the UST Program Manager does not receive an adequate amended petition within the time allowed, the request for reconsideration may be denied.

What does it mean if the ELD test results indicate that the UST system has “failed”?

The ELD test method ascertains the integrity of the UST system by introducing, and checking externally for, a substance that is not a component of the fuel formulation stored in the UST system (referred to as a “tracer” by Praxair and CGRS, and “chemical marker” by Leak Detection Technologies).

A “fail” test result indicates that this substance has escaped from the UST system. Based upon the distribution and concentration of substance detected in the soil gas samples collected around the UST system, Praxair Services, CGRS, and Leak Detection Technologies are able to infer the location, relative size, and type of release (liquid versus vapor).

What action(s) must be taken if the UST system “fails” the ELD test?

Pursuant to the UST regulations, if the UST system fails the ELD test, it may be an indication of an unauthorized release,⁴ and the owner/operator must notify the local agency within 60 days after the ELD test has been completed. [Cal. Code Regs., Title 23, § 2644.1, subd. (a)(5)] In addition, the owner/operator should review the test report and implement any necessary repairs or corrections to the system. Once the UST system has been fixed, the ELD test must be repeated to confirm that the UST system is no longer leaking liquid or vapor [Health & Saf. Code, §§ 25292.4, subd. (d), 25292.5, subd. (c)].

⁴ See Health & Saf. Code, § 25281, subd. (o), defining a “release” as “any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an underground storage tank into or on the waters of the state, the land, or the subsurface soils.

If an unauthorized release is confirmed, the owner/operator must comply with the requirements of California Code of Regulations, Title 23, Article 5. Pursuant to section 2652(a), within 24 hours after an unauthorized release has been detected, the owner/operator must notify the local agency, investigate the condition, and take immediate measures to stop the release. Pursuant to section 2652 (b), if necessary or as required by the local agency, the owner/operator must remove the remaining stored substance from the UST system to prevent further releases to the environment or to facilitate corrective action.

If you have technical questions regarding the ELD test method and test results, or questions regarding ELD notifications and requests, please contact the ELD Hotline at (916) 341-5866.

Sincerely,

Original signed by

Kevin L. Graves, P.E.
Underground Storage Tank Program Manager