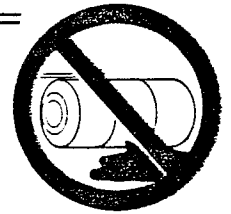


L.U.S.T.LINE



A Report On Federal & State Programs To Control Leaking Underground Storage Tanks

LUSTLINE to Communicate With States On UST Program

Nationally, leaking underground storage tanks (UST's) have been recognized as a major threat and cause of groundwater contamination. On November 8, 1984, the President signed the Hazardous & Solid Waste Amendments to RCRA mandating EPA to regulate underground storage of petroleum products and hazardous substances. During the process of developing these regulations (to be promulgated in May 1987), many States have already begun working closely with EPA. In fact, effective interstate and federal communication is critical to the successful development and implementation of these regulations. To augment communication, EPA has awarded a grant to the New England Interstate Water Pollution Control Commission (NEIWPCC) to, among other things, publish and distribute five issues of LUSTLINE, a bulletin designed to inform and update appropriate State regulatory agencies across the country. We hope LUSTLINE will be useful in enhancing nationwide UST communication between the States, EPA headquarters, and EPA Regional Offices.

Each issue of LUSTLINE will focus on current EPA activities, State activities, and discuss different aspects of a UST regulatory program. This issue, for example, looks at the EPA interim prohibition on installation of unprotected tanks and the RCRA mandated State Notification process. LUSTLINE will also inform States about UST activities in other States; handling of notification, development and implementation of State re-

gulatory programs, strategies working well and where, and mistakes to be avoided.

The UST Regulation Training Project

The Federal/State UST Regulation Training Project was developed by EPA to provide mechanisms by which mutual training or communication on UST regulatory issues and program development can occur on a national scale. These mechanisms include the publication of this LUSTLINE Bulletin, travel reimbursements to support State participation in Federal UST workgroup activities and, if possible, a national 2 or 3 day conference on UST regulation.

Travel reimbursements have been issued since May to designated State workgroup partici-

pants. Any unexpended funds from the first two work tasks will be used to support a conference which would serve as national forum for face-to-face communication on the UST regulations.

LUSTLINE Needs State Input

EPA Headquarters and the Regional Offices will be providing LUSTLINE with updates on federal activities. Our effective communication to you on State activities will depend heavily on State cooperation. Let us know what your State is doing on UST. What issues are controversial in your part of the country? What are your problems and your successes? What special issues do you want LUSTLINE to cover?

This is *your* newsletter. Let us hear from you! Readers are encouraged to contact LUSTLINE by writing or calling Ellen Frye, NEIWPCC, 607 Boylston St., Boston, MA 02116, tel. 617/437-1524.

EPA HQ UPDATE

The Law

The Hazardous and Solid Waste Amendments of 1984 extend and strengthen the provisions of the Resource Conservation and Recovery Act (RCRA), the Federal law protecting human health and the environment. The UST program regulates underground tanks that store liquid petroleum products, including crude oil. It also regulates substances defined as "hazardous substances" under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Hazardous wastes, regulated under Subtitle C

of RCRA, are not covered.

The amendments define an underground storage tank as any tank (including connected piping) with 10 percent or more of its volume below ground, with the following exceptions: farm and residential tanks holding less than 1,100 gallons of motor fuel; on-site heating oil tanks; septic tanks; pipelines regulated under other laws; systems for collecting storm water and wastewater; flow-through process tanks; liquid traps or associated gathering lines related to opera-

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HQ Update *Cont'd*

tions in the oil and natural gas industry; and tanks in an underground area, such as a basement, if the tank is above or on the surface of the floor.

The EPA Implementation Strategy

EPA promptly responded to the enactment of the RCRA Amendments by forming workgroups to develop a plan to implement the mandates of the law (Subtitle I). The workgroups are responsible to EPA headquarters' branch chiefs and are chaired by staff from a number of EPA offices. Membership in the workgroups includes representatives of State Associations (e.g. ASTSWMO) and key staff from many state regulatory agencies.

Through these workgroups EPA's "Development Plan" evolved and was drafted for the Administrator by the Agency's Office of Solid Waste and Emergency Response. The Plan describes the Agency's intended approach toward regulating UST's.

While EPA intends to implement the recommendations made in the Development Plan and meet schedules identified, modifications to these recommendations will be inevitable as the various projects are carried out and more information becomes available to the Agency. Although the Plan was never officially approved or disapproved, it has already served the valuable purpose of setting the "wheels in motion" for the complex task of regulating UST's.

EPA has responded to the comments on the final draft of the Plan (March 8, 1985) by incorporating them directly into the workgroup activities and outputs. Both the workgroups and the Plan are organized to cover the provisions of Subtitle I and supporting activities of regulation and economic analysis and research. The following are the major workgroups: Notification, Interim Prohibition, Technical Standards, Financial Responsibility, Corrective Action, Inspection and Enforcement, State Program Approval, Grant Guidance, Regulatory and Economic Analysis, and Research Needs.

Workgroup Updates

Because the progress of the workgroups is key to the implementation of Subtitle I, workgroup updates will be a regular feature of LUSTLINE. When news of

a work group's progress becomes timely to the regulation development process, news of that work group will be featured as a separate article. In this issue, for example, Notification & Interim Prohibition are discussed as separate articles because of their effective or impending places in the timetable mandated in Subtitle I.

Interim Prohibition

As of May 7, 1985, a prohibition has been in effect against the installation of new tanks that do not satisfy enumerated statutory requirements of Subtitle I (Sec. 9003(g)). A draft *guidance manual* for the interim prohibition is now being reviewed by several experts in tank construction, installation, and maintenance. This document describes several methods available to tank owners and operators for complying with the provisions of the interim prohibition. It will be revised to reflect the reviewers comments by July 26 and will be available in late August through the Regional UST Coordinators.

The guidance manual does not detail precisely which designs or combinations of equipment are acceptable under the interim prohibition. It only provides general information on the options specifically mentioned in the law to allow those installing tanks to properly implement those options.

Technical Standards

The Technical Standards Workgroup is assigned specific statutory mandates of Subtitle I which deal with the regulations for new and existing UST's. These include requirements under Section 9003 (c) which state that *existing* tanks must, *at a minimum*, address leak detection, recordkeeping and reporting; corrective action and reporting; and closure (under this section the Workgroup addresses leak detection and recordkeeping only). Performance Standards for new tanks (Sec. 9003(e)) must *at a minimum* address tank system design, construction, installation, leak detection, and compatibility.

The Workgroup's primary focus has been on general strategies the Agency could use in developing underground tank regulations. Several major issues have been identified and an Options Paper, scheduled for mid-August completion, has been prepared. The Paper provides a summary of background information on underground tanks, an appendix with more detailed information and five

regulatory options which are identified and briefly discussed.

The Options Paper provides several recommendations including recommendations for a general strategy that will guide the development of technical regulations. The Agency's options selection meeting is scheduled for August 28. At this time, the Administrator will make decisions on the direction of this program. The workgroup's next task will be the development of a proposed regulation. The proposal is scheduled for completion in May 1986; the final rule in February 1987.

Financial Responsibility

Section 9003(d) of Subtitle I requires EPA to study the need for and the desirability of promulgating regulations for maintaining evidence of financial responsibility for taking "... corrective action and compensating third parties for bodily injury and property damages caused by sudden and nonsudden accidental releases arising from operating an underground storage tank." EPA is currently evaluating several financial mechanisms, (including insurance, guarantees, surety bonds, letter of credit and qualifications as a self-insurer) and related regulatory options. This study is scheduled to be completed next spring and will provide a basis for the Administrator to decide on the need for and desirability of financial responsibility regulations.

Corrective Action

The UST Corrective Action/Reporting Workgroup met twice to discuss the options contained in the Regulatory Option Selection Paper.

LUSTLINE

Editor, Ellen Frye

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Lustline will be issued five times as a communication service during the Subtitle I RCRA Solid and Hazardous Waste Amendment Rule Promulgation Period. This Publication may be copied. Please give credit to the NEIWPCC.

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The options selection meeting with the Administrator, scheduled for this Fall, will be held concurrently with the UST Technical Standards option selection meeting. A rule is expected to be proposed in the Federal Register in Spring, 1986.

Inspection and Enforcement

The regulated community of underground tank owners is far larger than any EPA has dealt with in its other regulatory programs. An effective enforcement effort will serve as an incentive to this large community of tank owners to comply voluntarily with the regulatory program as it comes into effect. EPA will develop enforcement strategies which emphasize innovative approaches to achieve compliance. This will include promoting compliance with regulatory requirements through technical guidance and public education efforts and targeting enforcement actions to maximize environmental protection and achieve highly visible results.

This workgroup will develop an enforcement strategy as each major component of the regulatory program is proposed for public comment. When the regulations are promulgated, enforcement efforts can begin in a timely fashion.

State Program Approval

Section 9004 of Subtitle I of RCRA directs the Administrator of EPA to determine whether a State program complies with this section before a State program may be approved "in lieu of" the Federal program for regulation of underground storage tanks. The State Program Approval Workgroup was formed to help develop a plan to carry out this mandate.

In the March 1985 Development Plan, the Workgroup recommended development of regulations that would draw on EPA's experiences with Subtitle C of RCRA and with other State program approval regulations while taking into account the differences between Subtitle I and other programs. The Workgroup will develop an options selection paper exploring several flexible approaches to State UST program approval. The Workgroup will draft regulations for State program approval. The Workgroup anticipates publishing a proposed regulation in May 1986 and a final rule in February 1987. States may submit their programs for approval beginning May 8, 1987 when these regulations become effective. The statute man-



EPA UST Workgroups Chairpersons

Workgroup Chairperson	Phone #	Workgroup
Barbara Hostage Response Standards and Criteria Branch, OERR	202/382-2198	Corrective Action
Pat Cohn Implementation and Compliance Branch, OWPE	382-9374	Inspection and Enforcement
David Berg Energy Processes Division, ORD	382-5747	Research
Susan Mann State Programs Branch OSW	382-4422	State Implementation/Approval
Harold Lester (Ron Burke) Economic Analysis Branch, 'OSW	382-2791	Regulatory and Economic Analysis
Joanne Bassi Waste Treatment Branch, OSW	382-7928	Financial Responsibility
David O'Brien Waste Treatment Branch, OSW	382-7917	Technical Standards Development
John Heffelfinger Overall Coordinator, OSW	382-7923	Development Plan
Ginny Garelick Waste Treatment Branch, OSW	382-7925	Notification
Pat Fox Waste Treatment Branch, OSW	475-6672	Outreach
Steve Nacht Waste Treatment Branch OSW	475-6673	Interim Prohibition

dates (and EPA regulations will require) States to demonstrate the inclusion of State analogues to the Federal regulatory program and provide for adequate enforcement. In order to receive EPA approval, State program standards must be at least as stringent as the Federal standards.

Grant Guidance

The State UST Grant Guidance Workgroup developed the FY 1986 State UST Grant Guidance for the Regions to use as a basis for negotiating State UST grants. If appropriated, seven million dollars in funds would be provided to assist States in development and implementation of a comprehensive regulatory program for underground storage tanks.

FY 1986 State UST grant guidance was transmitted to the Regions in mid-June. Fundable grant tasks are divided into high priority tasks and other tasks. High priority tasks include: 1) Processing notifi-

cation and establishing a data processing system, 2) Development of statutory and regulatory authority for a State underground tank program, 3) Compliance promotion for interim prohibition, 4) Investigation of alternative funding mechanisms, and 5) Provision of information and technical assistance to notifiers. Other tasks include: 1) Development of Certification program for tank installers and 2) Technical assistance and training for State personnel. Specific activities funded under each State's annual grant work program will be individually negotiated by the Regional Offices.

Development of FY 1987 grant guidance will begin in December.

Regulatory & Economic Analysis

The Economic Analysis Branch of the Office of Solid Waste has ongoing projects that will provide estimates of: characteristics of the regulated populations, national

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UST Notification Requirements Approaching Completion

Subtitle I of the amended RCRA states that EPA must "prescribe the form of notice and the information to be included" in the "notification" by November 8, 1985. Owners will have six months from that date to notify States of their tank ownership (or 30 days after installation for new tanks after May 1986).

On May 28, 1985, the proposed notification requirements for owners of underground storage tanks were published in the **Federal Register**. The requirements affect owners of underground storage tanks in use, tanks that will be brought into use, and tanks taken out of operation after January 1, 1974, but still in the ground. (See Notification Schedule). Exemptions are specified in the **Federal Register**. The proposed regulations also impose certain requirements upon anyone who deposits regulated substances in an underground storage tank and upon sellers of underground storage tanks. EPA invited comment on the proposed requirements and held public hearings on July 2, 1985, in Denver, Colorado, and on July 10, 1985, in Washington, D.C. The Agency continued to accept comments from the public until July 15.

Several issues were raised during the public comment period. These included the need for EPA to define a number of key terms used in regulations such as "tank," "owner," and "depositor of regulated substances." In addition, several industry representatives felt that EPA should encourage the States to use and accept the Agency's proposed notification forms to ensure uniform reporting. Commentors also questioned the need to have separate notification forms for tanks in use and for non-operational tanks. EPA is now considering combining the two forms into one. All of these issues will be addressed by the Agency when the final notification requirements are promulgated in November of this year.

EPA's Role

Congress intended that the UST program be run by the State governments with minimum Federal involvement. Though EPA is assigned the task of prescribing the form of the notice and the information to be contained in it, State

Agencies, *not* EPA, are required to receive the notification forms. Under the proposed EPA notification regulations, the use of the Federal notification form would be mandatory in all States except in those that have developed comparable State forms. To be certain of which notification form to use, tank owners should contact the appropriate State agency designated to receive the forms.

EPA has already been assisting States in communicating the notification requirements through a massive public outreach effort involving representatives of local government, environmental groups, industry, and trade associations.

The Agency is also preparing a

notification guidance manual that will be available to States in October 1985. The manual focuses on a variety of implementation methodologies and public education tools. It will provide details on several State notification programs already under way. In addition, it will discuss the cost and effectiveness of various communication tools such as workshops, press releases, radio spots, direct mail, and public forums. The manual will also include a chapter on developing and implementing a computerized data management system. As part of this chapter, EPA plans to provide States with a software package that can be used to computerize data from the EPA notification form.

Notification Schedule

Provisions	Time Frame for Enactment
* State Governors must designate the State or local agency to receive the UST notification forms	* By May 8, 1985
* EPA must finalize the notification form	* By November 8, 1985
* Owners of existing underground storage tanks must notify the State or local agency of each tank's age, size, type, location, & uses.	* By May 8, 1986
* Owners of underground storage tanks taken out of operation after January 1, 1974, but still in the ground must notify the State or local agency of each tank's age, size, type, location, uses, the date taken out of service, and the type and quantity of substance left in the tank.	* By May 8, 1986
* Owners of newly installed underground storage tanks must notify the State or local agency within 30 days of bringing the tank into use.	* After May 8, 1986
* Anyone who deposits petroleum products or CERCLA hazardous substances in an underground storage tank must inform the tank owner of his responsibility to notify the State or local agency.	* From December 8, 1985 through June 8, 1987
* Tank sellers must inform tank owners of their responsibility to notify the State or local agency.	* From March 1987 for tanks storing petroleum products
	* From September 1987 for tanks storing CERCLA hazardous substances.
* A penalty not to exceed \$10,000 can be assessed for each tank for which notification is not given or for which false information is submitted.	

States' Role

The extent to which a State will participate in the implementation of the notification requirements will depend on how each State interprets the statutory provisions. Some States will interpret the provisions narrowly and will determine that their only legal obligation is to designate an agency to receive the notification forms. Other States, particularly those with significant numbers of tanks or ground-water problems, may assume a more aggressive role in responding to this emerging environmental problem. They may also be motivated by economic considerations to prevent product losses. A few States (i.e. RI, CA, FL) are, in fact, well under way in the implementation of notification programs. Instead of waiting for EPA to produce a notification form, they and other States, have developed their own forms and systems to manage the forms.

The Benefits of Notification

It is obvious that, for tank owners, registering and managing underground tanks add to paperwork and take time and effort away from running a business. But many benefits can be derived in the program. Complete and accurate information on the notification forms will provide States with the data necessary for adopting regulations that are sensible and that impose an appropriate degree of control. Such controls may ultimately prevent loss of product, limit liability and increase insurability. Leaks from tanks can contaminate ground water, which may lead to health problems, lawsuits and cleanup costs. The sooner problems are identified, of course, the less expensive they are to clean up. Finally, noncompliance with the program to control underground storage tanks carries heavy civil penalties - a strong economic incentive. ■

List of State UST Regulatory Agency Contacts Available

For a copy of Leaking Underground Storage Tank Contacts, reference EPA/530-SW 85-018, order from:

Docket Clerk
Office of Solid Waste (WH 562)
US Environmental Protection Agency
401 M. St. SW
Washington, D.C. 20460

UST Regulation Development And Notification Schedules

Water supply contamination, tank leak surveys, and public pressure have accelerated the UST regulatory timetable in several states across the nation. Chances are good that some States will have new UST regulations in place well in advance of EPA's deadline for promulgating federal regulations (May 1987). So far, the development of State UST regulations has required State agencies to strike a delicate balance between what is needed to protect environmental quality, human health and safety with what is a reasonable burden for tank owners and what is a realistic management and enforcement task for the agency. The large universe of tanks that have been buried in the past presents a mindboggling regulatory problem and, inevitably, there will be State-by-State variations in the regulations.

Unfortunately, the interstate differences in schedules and regulations presents a complex burden to companies who own tanks in several states. Further complicating the lack of interstate consistency is the fact that many municipalities, counties, etc., are passing their own bylaws and ordinances.

Here is a State-by-State update on a few States' regulatory development schedules. Regulations in FL, RI, CA, and MI cover both petroleum and chemical storage as also prescribed in the Solid and Hazardous Waste Amendments to RCRA. So far, regulations for the Northeast States of CT, ME, MA, NH, NY and VT cover petroleum storage facilities only. These States recognize the importance of regulating chemical tanks, but decided to focus first on developing regulations for the larger universe of petroleum facilities. Of course, schedules are subject to change (usually delays), but this should give an idea of how far ahead of the federal timetable several States are, when State regulations will come into effect, and when notification or tank registration programs have been or will take place.

★ **Florida** A State regulation pertaining to vehicular fuel storage tanks larger than 550 gallons (either above or below ground) went into effect on May 21, 1984. Tanks covered by the regulations had to register with the State by December 31, 1984. Florida will still have to follow the federal notification

scheduled for other petroleum products, chemicals and tanks less than or equal to 550 gallons.

John Svec & Susan Boyles
(904)488-0300

★ **Rhode Island** Emergency regulations requiring tank registration went into effect in October 1984 with an end date for existing tank registration in March 1985. The final expanded regulations, covering more detailed aspects of UST regulation took effect in May 1985.

Michael Del Rossi (401)277-2234

★ **California** In response to concerns about leaking underground tanks, especially in the Santa Clara Valley, two UST bills were passed in December 1983. One bill required all underground storage tanks to be registered with the State by July 1, 1984; farm tanks from October 1, 1984 to December 31, 1984 (registrations are still coming in). The other bill required the State Water Resource Control Board to write regulations for counties and cities to use to run their own tank permit programs. This law also gave counties the option of developing their own ordinances before January 1, 1984. Draft State regulations are undergoing administrative law office review and are anticipated to go into effect by August 1985. Several county/city ordinances are now in effect. Tank owners who need to know who their county/city contact is should call Betty Moreno, SWRCB (916)324-1262.

Michael Falkenstein (916)322-0218

★ **New Hampshire** Draft regulations for petroleum tanks are under review by a State legislative review committee. Another public hearing will be held; adoption and effective date of the regulations is anticipated for September 1985. New Hampshire will use its own form for tank registration.

Michael Sills (603)271-3503

★ **New York** Public review of the draft bulk petroleum storage regulations ended in March 1985; final regulations are expected to take effect in October 1985. New York

Continued next page

plans to use its own form for petroleum tank registration, but the decision on a notification form for both petroleum and hazardous substances has not been made.

Paul Sausville (518)457-7363

★ **Connecticut** Final regulations are now undergoing review by the legislative committee. Adoption is anticipated for August, 1985, and the regulations are expected to take effect **November 1, 1985**. Owners of existing tanks will have from November 1, 1985 - May 8, 1986 to notify the State. Connecticut intends to use its own notification form and has already submitted the form to EPA Headquarters for minimum requirement approval.

Carmin DeBattista (203)566-2860

★ **Maine** On June 28, 1985, the Governor signed into effect new UST legislation with tank standards which superseded interim rules prepared by the Maine Department of Environmental Protection, including Maine's tank permit process begun in April 1984. Adoption of new DEP rules is anticipated for **November 1985**. The legislation also created a board to certify tank installers; by May 1, 1986, all tank installations must be done by State certified installers. Maine plans on using its own notification form and will soon submit a draft to EPA for approval. Maine registration/notification covers all petroleum tanks of all sizes and categories of use and ownership.

George Seel (207)289-2651

★ **Massachusetts** Existing tank regulations designed for safety are currently under extensive revision to combine public safety interests of the State Board of Fire Prevention with new environmental concerns. There is a memorandum of understanding between the Board and the Dept. of Environmental Quality Engineering to work jointly on this revision which is tentatively scheduled for public hearing in October 1985. The Board of Fire Prevention has responsibility for the notification program and anticipates using a modified federal form.

Edward Shub (617)727-6255
Ken Hagg (617)292-5500

New Requirements In Effect For UST Installations

On May 7, 1985, interim requirements took effect for new installations of underground storage tanks. These interim requirements are established in section 9003(g) of Subtitle I of the Resource Conservation and Recovery Act as amended in November, 1984. The interim requirements for new tank installations (known as the "interim prohibition") will remain in effect until new tank standards become effective in 1987.

The interim requirements apply to all new installations of underground tanks for petroleum products and hazardous substances, as defined in the Comprehensive Environmental Response Compensation and Liability Act (CERCLA or the Superfund Act). Certain tanks are exempted from regulation, including farm or residential tanks of 1,100 gallons or less capacity and private heating oil tanks.

The purpose of the interim requirements is to assure that new tank installations will be carried out in a way that will minimize the likelihood that the tanks will leak. Three general requirements must be satisfied by all underground storage tanks, including underground piping. These are: 1) that the tanks must be designed, constructed and installed to prevent releases due to corrosion for the operational life of the tank; 2) that the tank must be designed, constructed and installed to prevent releases due to structural failure of the tank for the operational life of the tank; and 3) that the materials used in the construction or lining of the tank or its piping must be compatible with the substance to be stored in the tank. Tanks that are installed in soil with a resistivity of 12,000 ohm-cm or more are exempted from the re-

quirement for corrosion protection but must still meet the other two requirements.

EPA is preparing two documents to assist the public in understanding and applying these new requirements. The first is an *interpretive rule*, which will be published this summer. The interpretive rule is a statement issued by the Agency's interpretation of the requirements of 9003(g). The interpretive rule is published without notice or comment. It does not expand on or change in any way the requirements of the statute. The second document is *technical guidance* which will provide more detailed advice to the interested public concerning technical approaches to tank design, construction and installation which may serve to meet the requirements of Section 9003(g). The guidance will also address practices and tank designs which are not likely to prevent releases.

EPA is developing a targeted approach to enforce the interim prohibition. This approach will focus on identifying those geographic areas that are more sensitive to serious harm from leaking underground tanks and users who install large numbers of tanks. The Agency can then target inspection and enforcement activities where such efforts will maximize environmental protection and where it will be easier to identify installers.

Field investigations and inspections are important components of an effective enforcement program for the interim prohibition. EPA intends to explore with states cooperative approaches to obtaining early field information on new tank installations.

★ **Michigan** Although the DNR has had authority to issue storage permits since April 1973 (primarily applied to above ground tanks greater than 40,000 gallons), revised regulations for petroleum and chemical tanks are expected to take effect in **Spring 1987**. A tank permit requirement went into effect on March 29, 1985. Michigan intends to use the federal notification form.

Lane Denniston (517)373-8147

★ **Vermont** Legislation passed in the Spring 1985 requires the Vermont Agency of Environmental Conservation to begin a petroleum tank permit program by **July 1, 1986**, with regulations for chemical tanks to follow. Vermont has already submitted its draft registration form (for both petroleum and chemical tanks) to EPA Headquarters for approval. ■

Paul Van Hollebeke (802)828-3395

Getting The Word Out On Notification

A truly successful State notification program will depend on how effectively the "word gets out" before the forms are mailed out. States face the challenge of communicating the notification requirements to a huge and sometimes elusive regulated public. If this regulated group is aware of the UST problem and the new requirements ahead of time, they are apt to be more responsive toward compliance.

States that have already implemented notification programs and those now developing programs realize that increased public awareness and participation in UST regulation depends on an effective communications strategy. States have identified a number of useful communication tools such as workshops, press releases, direct mail, and public forums. The most effective tool, however, seems to be the use of trade associations in communicating the UST requirements to the tank owners. Many States, in fact, consider trade association participation essential to getting the word out and plan to rely on them extensively.

The States of Florida, California, and Rhode Island have already successfully gotten the word out, gotten their forms out and, for the most part, gotten the forms back. Here is a taste of each of their strategies:

★ **Florida** - Industry, especially oil companies, helped in communicating with Florida's regulated community. The DER worked closely with industry and trade associations in developing their regulations. The DER feels this interaction contributed to an overall positive notification experience. The notification mailing list came from the Department of Agriculture, Bureau of Weights and Measures (for retailers), the Department of Natural Resources (for coastal marinas), the Department of Revenue (farmers and fishermen applying for gas tax refunds) and trade associations who did a lot of the distribution. The DER also purchased lists from the SIC Code, and a small number of forms were distributed by drivers servicing small end users. Obviously many names were duplicated on these lists, but a large portion of duplication was sorted out on a master electronic file.

Florida mailed out 39,000 notices and has had a good return response (not yet computer analyzed). The State has its own data processing system which keeps an ongoing record of each facility.

John Svec/Susan Boyles
904/488-0300

★ **California** - The State has registered about 166,000 containers which they feel is the majority of their regulated universe. Tank owners have been well aware of the UST problem and the new requirements through the news media, brochures, letters, trade associations, etc. Mailing lists came from many sources, but the California State Sales Tax address list contributed significantly. They also received addresses from a consultant doing a UST survey in that State. All information is filed on their own data system. They feel their extensive communication network has been critical to the workability of the program.

Michael Falkenstein 916/322-0218

★ **Rhode Island** - The State held two public workshops on regulations for tank owners, industry, fire departments, etc. The DEM had a 40 member Regulation Development Workgroup composed of industry, trade associations, environmental groups, fire protection people and other manufacturers.

The members of the Regulation Development Group also assisted in getting the word out to tank owners. The DEM mailed out notification form request cards to 2,000 facilities. Mailing lists came primarily from phone books, fire departments and the Department of Agriculture. The State is developing its own data processing system.

Michael DelRossi 401/277-2234

Notification Form Management

Rather than file the completed notification forms in a basket, States should either be developing their own ADP systems or be planning to use any material or system developed by EPA. States must determine who will manage this sys-

tem and what data elements will be needed. LUSTLINE would like to hear from States about unique and innovative ways this can be done. In addition to notification information, will your State include on its system, compliance inspection results? . . . permit licensing activities? . . . fee systems? . . . tracking, discharge reporting, others? Please let us know how you will manage notification/registration returns.

EPA's Outreach Activities

The EPA is developing a number of outreach activities for the UST program. Many of the activities are directed toward State and local agencies. For example, a guidance document on notification, scheduled to appear in the Fall, will be designed to aid the States in implementing their notification programs. On August 1 and 2, EPA had a conference in Washington, D.C., on Subtitle D, UST and Small Quantity Generators. The conference brought together representatives from local governments, local firms, and public and private interest groups with State and EPA officials to discuss these three developing programs.

EPA is now evaluating a grant proposal from the National Fire Protection Association that would educate local fire service personnel on the UST program, particularly the interim prohibition.

Extensive outreach activities for those affected by the UST program are also underway. An initial mailing consisting of a UST fact sheet, a news release on the interim prohibition and notification has been sent to approximately 350 trade groups, environmental organizations, and other interested parties. EPA has monthly meetings with a core group representing trade associations and governmental agencies such as the Small Business Administration. These individuals provide information and advice on the UST outreach program.

Guidance documents in addition to the one on notification will be forthcoming as the UST program progresses. The document on the Interim Prohibition will be available in late August through Regional UST coordinators. ■

Pat Fox (202)475-6672

Regional Updates are written from the perspective of individual EPA Regions. By successively alternating Regions, each bulletin can share activities and concerns that are common to all Regions and unique to specific Regions. This issue focuses on Region I and is written by William Torrey, Region I's UST Program Coordinator (617/223-1908).

Region I Responds To The Federal UST Mandate

Like all the EPA Regions, the Boston Office has been busy assisting States in developing their UST regulations. Northeast State regulatory initiatives began in the early 80's because many of the Region's environmental agencies had been coping with tank releases and damages since the 70's and because these incidences have been on the increase.

Although the final EPA National Tank Standards may not be in place until 1987, in the area of petroleum tanks, Region I States all have initial statutory authorities (See Table), four will have public safety and environmental regulations in place by January 1, 1986, and one State has already conducted a notification/registration process. Region I's job, therefore, is primarily to assist these advanced States in developing their individual plans for tank regulation and to ensure States' compatibility with the evolving Federal program.

After receiving each Governor's letter designating a lead agency for notification, I made a tour of the State Capitals to introduce the first steps in the Federal agenda and to review each State's status and plans. The States have set up their UST regulatory organizations over a wide spectrum of environmental and public safety agencies; a few States have drawn from hazardous waste managers, one has a groundwater control lead and two have set up a team approach sharing UST responsibilities with more than one agency including the State Fire Marshall and the Water Pollution Control Agency.

Since the visits, Region I has started putting the initial Federal program in place. Over the summer, the Agency worked with the States to develop the grants and work plans for use of the new Federal UST funds for 1986 (\$100-125 K/per State). The Region was able to direct some of its discretionary funds to a Connecticut proposal to

use the University of Connecticut's Center for Instructional Media and Technology for an extensive public education effort. This package includes the preparation of a 30 minute videotape to cover the State's UST regulations, the EPA UST program and to provide guidance material. They will also conduct a videotaped workshop/panel discussion which will be broadcast by microwave from the main campus to attendees at regional campuses with talk back capability. Finally, this grant will develop 30 second to one minute public service UST announcements to be disseminated to the broadcast media.

The Notification process will formally begin for the regulated community in November. But earlier work on form design, printing and distribution; staff training for questions from tank owners; and public awareness and education have already been underway in the Northeast. Probably all of these States will opt to develop their own forms which capture the Federal form and incorporate any additional data which they feel is necessary.

The States are in the process of reviewing existing statutory authorities and penalties for adequacy in relation to the new Federal law. Innovative methods of getting voluntary and absolute compliance with the Interim Prohibition will need to be developed and put in place. Also, ambitious plans for seeking greater State support of UST regulatory budgets will be critical to long term program stability. Clearly the new UST program has many questions associated with it and Region I staff have tried to be accessible to key regional and State interests through participation in professional seminars in the area.

Any equation for success in starting to regulate UST's and releases must include "Funding the Solution". States have begun to address this issue in several innovative ways. The Rhode Island DEM requested authority from the State legislature for a one million dollar bond issue to allow low interest loans (2-3 points below prime rate) for tank replacement. This was initiated to help cut down on future leak incidents and to aid tank owners in upgrading their tanks. Unfortunately, this proposal was not passed this session; however, it may be reintroduced in 1986.

Several States have emergency stop gap measure bottled water

programs or the ability to fund community system extensions (if practicable). These measures are in response to the need to act quickly in aiding victims whose on-site wells have been contaminated. When a leak is discovered after groundwater damage has occurred, most States have some emergency response capabilities through tank owner-paid clean-ups, administrative orders, or court actions, or, with no responsible party present, use of spill mitigation funds. However, since most of the affordable first-level response mitigation efforts cannot restore a contaminated aquifer the homeowner whose well is affected is the ultimate victim.

But mitigation resources such as these are expensive and State funds are limited. We are watching closely the developments in the Superfund Reauthorization. A proposal for a \$3/4 billion federal UST release fund has been submitted. If this legislation is passed by Congress and accepted by the Administration, the pace of future leak response actions could greatly escalate.

In New England, the large number of potential UST leak sites and the population-at-risk in this groundwater dependent region reinforces the importance of a UST regulatory program. In some ways, this program has a wider reach into the quality of life of New Englanders than anything now regulated under State/Federal initiatives in hazardous waste management and Superfund site clean-ups.

Model UST Legislation Available to States

The National Conference of State Legislatures has a grant from EPA to draft model UST legislation for States' use in developing their own regulations in accordance with Subtitle I of RCRA. Draft model legislation should be available early in 1986 with a final model completed in May of 1986. States with legislation enacted or under development are encouraged to submit copies of their legislation to Susan B. Mann, USEPA, 401 "M" Street, S.W., Washington, D.C. 20460 (WH563B).

	Law	Regulation Status	Notification Date	Exemptions	Data Systems	Fee Systems for Tanks Under Considerations
Federal Program	RCRA Subtitle I 11/84 (P&S)	P-5/87 (New & Exist.) S-11/87 (New) S-11/88 (Existing)	5/86	° 1100 Gal. tank w/motor fuel (farm & residential) ° On site heating oil regardless ° Flow thru process tank	N/A	
State Programs					System/ Language	
CT	CT General Statutes 22a-449(d)-1 P&S	P-Effective 10/1/85 S-None	Federal	° Fuel oil is regulated ° Size of regulated tank to be determined	Data General/ Cobol Contractor Design as condition of new purchase	
MA	P-Ch. 48 Sec. 13 S-Ch. 21 E	P-Effective Board of Fire Prevention S-None	Federal	° Fuel oil is regulated ° No size cut-offs	?	
ME	Title 38 MRSA Sec. 541 P (Partial)&S	P-Interim - 4/85 Final - 11/85 S-None	Federal	° Fuel oil is regulated ° 500 gal. size is exempt	Honeywell-mini IBM Mainframe/ Cobol	
NH	P-RSA 146 & 149 S-None	P-Effective - 8/85 S-None	Federal	° Fuel oil is regulated; ° 1100 gal. facility is exempt	Hewlett Packard/Cobol Wang	
RI	Chapter 46-12 (et al) P&S	P&S Notif. only 10/84 P&S Regulations Effective - 5/85	due by P&S - 4/9/85	° Fuel oil (#1, 2 & 3) is regulated (except residential) ° 1100 gal. motor fuel or heating oil exempt	In-House	
VT	H.B. 65 P&S	P&S Regulations 6/86	Federal	To be determined	Hewlett-Packard	X
NY	P-Article 17 Title 10 S-None	P - Noticed - 3/85 Effective - 8/85	Federal	° Fuel oil is regulated ° 1100 gal. facility is exempt	Another State Agency Supports	X

P - Petroleum Liquids S - Hazardous Substances

March 14, 1985 revised August 1985

Region I's Historical Response To The UST Challenge

Approximately 20% of New England's population (nearly 3 million people) depend on groundwater as their sole source of water supply. Moreover, 2087 community water systems (80%) utilize ground or combined ground and surface water sources. Over the past 10 years, there has been steadily mounting evidence that New England's shallow aquifers are vulnerable to contamination from a variety of sources such as landfills, septic systems, pesticide applications, agricultural operations and, of course, tanks.

The Region I office has been working closely with its States for over four years to enhance aware-

ness of a broad spectrum of groundwater management and protection issues. These early efforts were initiated through the Office of Groundwater Protection/Water Supply Branch in the Water Management Division.

As groundwater contamination incidences in New England increased, States and communities moved toward initiating various kinds of groundwater protection/regulatory strategies. Through innovative use of various water pollution program grants, including new funding in 1985 for State groundwater program developments, the States began formal programs to investigate ground-

water planning, groundwater standard setting and regulatory programs for leaking underground storage tanks.

Much of the credit for the advanced state of UST regulatory program development must also go to the New England Interstate Water Pollution Control Commission (NEIWPCC). This consortium of six New England States and New York has provided a forum for several decades for Northeast States to share information on stream standard classification and achievement of Clean Water goals. They later turned their attention to groundwater issues and began in January 1984 to hold regular meet-

Continued on page 12

States Assess The Nature Of The UST Beast

By the time the UST notification period is over, States will have a lot more insight into their underground storage tank universes. The size of this universe is already looking more remarkable than original estimates which ranged from 1.5 to 2 million tanks nationwide. More recently a Steel Tank Institute survey indicated the national UST universe could be as great as 10 million.

Many states have been responding to accelerated numbers of reported tank leaks or complaints of fumes or groundwater contamination due to tank leaks. These increases correspond, in part, to the age of the large number of bare steel tanks installed in the late 1950's and 1960's. In addition, an alerted public and better reporting by tank owners have added to the States' growing lists of leak incidences.

Prior to the Hazardous & Solid Waste Amendments to RCRA, States like Pennsylvania, New Mexico, Maine and California had initiated investigations of their own. They did this to better understand the scope of the UST problem and to determine a feasible approach to regulating these underground storage facilities. Pennsylvania, New Mexico and Maine conducted Statewide surveys of reported tank-piping leaks (primarily petroleum), while the California San Francisco Bay Regional Board survey focused on their chemical storage and handling facilities. The results of all the State surveys reinforced an already recognized need for UST regulations.

A Six Month Survey of Pennsylvania LUST Cases

From September 1984 to February 1985, regional staff of the Pennsylvania Department of Environmental Resources (DER) conducted an investigation of 68 cases related to leaking underground storage systems. The survey yielded an assessment of reported leaks relative to such characteristics as tank age, size and type and causes of product release. These results could well be replicated in other States with similar soil and tank installation histories.

The majority of the Pennsylvania investigations focused on releases from service stations (55%) and business establishments (30%). Ninety-seven percent of the re-

leases were petroleum-related with gasoline (58%) and heating oil (19%) the most common materials lost. The prevalent construction material used in the systems was almost always steel (92%). Ninety-five percent of the tanks were constructed of steel, 5% fiberglass. Ninety percent of the piping were steel, 10% were fiberglass, plastic coated steel or cathodically protected steel. None of the steel tanks were cathodically protected.

Releases from underground systems were unidentified (66%) indirectly as a result of secondary impacts on water supplies, dwellings or vehicles which malfunctioned. They were directly identified (34%) as a result of inventory records or precision testing. Positive identification of the source was required through precision testing or inventory inspection in seven percent of the cases where secondary impacts were first noted.

The Statewide totals indicated that leaks were evenly distributed between tanks (49%) and piping (39%). In 12% of the cases, both the tank and piping were found to be leaking. Problems with piping were generally more frequent during the early periods after installation while leaking tanks became more prevalent later. Fifty-three percent of piping problems occurred within the first ten years after installation with 77% occurring within the first fifteen years. In contrast, 71% of tank leaks occurred more than ten years after installation, 46% after fifteen years. Release from fiberglass systems and from plastic coated or cathodically protected steel piping occurred within the first five years as a result of installation associated problems.

The three major causes of product release were corrosion (62%), loose fittings (19%), and improper tank installation (13%). The high corrosion percentage was undoubtedly a reflection of the predominance of uncathodically protected steel used in tank and piping construction.

The most common volume released (43%) was in the range of 100-1000 gallons. The most frequent releases occurring in the smaller (0-100) and larger (over 1000) volume categories originated from tanks, in contrast to those in the intermediate (100-1000) volume category which originated from the piping. Seventy-two percent of the releases between 0-100 gallons

originated from tanks, 58% of the releases between 100-1000 gallons originated from piping, and 62% of the releases over 1000 gallons originated from tanks. No relationship existed between volume lost from the tanks and tank capacity as a near uniform distribution occurred. Thus, with few limitations, *any size tank can be responsible for a release of any volume.*

Inventory records were maintained at 68% of the sources. Though a relatively high degree of responsibility was demonstrated by system owners/operators, only a small percentage of the releases were discovered though their efforts (29%). Seventy-nine percent of the sources were never precision tested prior to the Department's release investigation.

Finally, releases from underground storage systems frequently resulted in multiple impacts on surrounding homeowners and water resources.

Although the number of sites studied is too limited to make broad definitive conclusions, the DER feels they have sufficient information to define the characteristics of these cases. Regional staff will continue to document releases for an additional six months, through August 1985, and then issue a final report.

John Osgood, Chief, Ground Water Unit, DER, 717/787-9633

Scanty Data Spurs Maine On

The results of Maine's Survey of Existing Underground Oil Storage Tanks completed in October, 1984, demonstrated "that they really didn't know anything," according to Marcel Moreau, Geologist with the Bureau of Oil and Hazardous Materials Control at the Maine Department of Environmental Protection (DEP). The DEP survey, mandated by the Maine legislature in 1984, was conducted to inventory the UST facilities in the State in so far as they had available records. As far as available information went, they found they had little information in the card files, inadequate location data, out of date information and no way to accurately assess the size of the UST universe. According to Moreau, they could basically say that wherever there were lots of people, there were lots of tanks.

While this whole survey might seem like an "exercise in futility", Moreau quickly pointed out the importance of the report, "When you know there are a lot of tanks out there you know nothing about, you can really justify the need for notification requirements and for registration requirements."

The existing tank data estimates ranged from 2,713 to over 23,000. The latter figure is probably the most accurate. It resulted from a cooperative effort with the Maine Oil Dealers' Association who circulated, collected and tabulated DEP questionnaires. As a result of recent legislation, Maine's registration program includes all petroleum storage tanks of all sizes and all categories of use and ownership. Though this may seem extreme, the Maine legislature recognized that the size of the tank or the owner of the tank has little to do with whether groundwater can be contaminated. As Morceau says, "a church tank is as likely to leak as a junkyard tank."

Marcel Moreau 207/289-2651

New Mexico's Petroleum Product Contamination Survey

The Environmental Improvement Division of New Mexico's Health and Environmental Department documented and inventoried 261 reported petroleum-product contamination incidents occurring throughout the State between 1972 and 1984. Since that time the number of these incidents has steadily increased. The incidents surveyed were caused by one of five classifications of petroleum-product contamination; storage and handling facilities (service stations, bulk fuel, bulk fuel terminals), refinement, transportation, disposal, and unknown sources.

The storage and handling facilities pose the greatest threat to groundwater in New Mexico. The main reason: there are lots of them. There are about 2,640 service stations and 760 bulk fuel plants/terminals in the State. Fifty-six percent of all documented contamination incidents were caused by these facilities representing 19% of the documented product loss for the time surveyed. Department staff estimate 8000 UST's are currently in use at retail outlets plus an unknown number of agricultural, private, fleet user and abandoned tanks.

Refineries pose the second greatest groundwater threat in the State because they are responsible for 66% of the volume of all product lost.

Devon Jercinovic, 505/842-0835

Industrial Chemical Releases In Silicon Valley

California's most notorious and disturbing leaks occurred in the San Francisco Bay area where a solvent leak was discovered in 1981 at a major electronics company in San Jose. At this site, several thousand gallons of trichloroethane escaped from a leaking underground storage tank, contaminating a public groundwater supply. This incident was a catalyst for intensified groundwater regulation activity and, also, the San Francisco Bay Regional Board's investigation of underground chemical storage and handling facilities in their three sensitive groundwater basins.

The survey identified nearly 1700 individual tanks at 388 industrial sites. Of these sites, 97 were found to have underground tanks containing solvents. Subsurface contamination was found at 75 of these sites. There were 21 previously detected cases in the Bay area and more have been discovered since the survey.

Although highly toxic solvents were the focus of this study, the investigators concluded that the high percentage (75%) of subsurface contamination associated with these tanks could be proportionately the same for tanks containing materials other than solvents. They also pointed out that tank tightness testing had reportedly been performed on 61% of the facilities, which indicates that the level of testing sensitivity was inadequate or that the testing was improperly done. Contamination, however, was caused not only by leaking tanks, but by improper storage, handling or disposal above ground. For example, repeated overfill of tanks results in surface spillage. Since these findings, new regulations have been developed at the State and local levels to prevent future release of industrial chemicals into soil and groundwater. ■

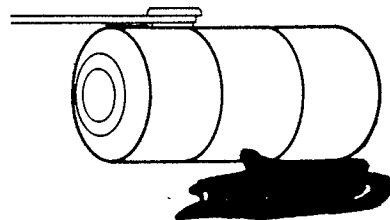
Don M. Eisenberg, Ph.D.,
Senior Water Resources Control
Engineer, 415/464-1255

Reg. Analysis Cont'd.

compliance costs, economic impact assessment, health risk assessment, and various measures of cost-effectiveness.

Trade associations, State agencies, and other data sources have been contacted to characterize the UST program. A tank failure simulation model is being developed that will be used to predict release volumes from a tank for various design, control, and hydrogeologic specifications. As regulatory options are developed by the workgroups, the model will be used to provide cost-effectiveness measures of the various control strategies. Potential measurements of effectiveness include release volume avoided, leaks prevented, plume length, and contaminant concentrations at selected distances. Health and mobility data (e.g., toxicity, mobility, solubility, taste and odor) are being collected for each chemical as the substances are identified. Once the technical and financial/economic characteristics have been collected, the regulated population will be modeled so that national compliance costs and economic impacts may be assessed.

Draft estimates of the UST population and cost-effectiveness measures for various regulatory options is expected to be available to the Workgroup on July 24-25. Longer term efforts to determine national compliance costs, economic impacts, and an assessment of health risks will be completed by mid-November for Workgroup review. ■



Here Lies The Problem, Leaking Underground Storage Systems

Slide/Tape now available.

This 25-minute slide/tape show is designed to alert tank owners and municipal officials to their liabilities and responsibilities regarding underground storage systems.

The show explains why leaking tanks are a problem, why tanks and piping leak, the tremendous costs of inaction, and the range of leak prevention alternatives.

The show was produced in 1985 by the **New England Interstate Water Pollution Control Commission** (with funding from the U.S. Environmental Protection Agency Region I) primarily for use as a public information tool by the Northeast state environmental agencies as an introduction to public presentations of each state's underground storage tank regulatory or management program. The show is generic enough for general distribution and use.

The show is available for *LOAN* (at a prepaid charge of \$4.00 per show to cover our insured shipping costs) from:

New England Regional Wastewater Institute

2 Fort Road
South Portland, ME 04106
(207)767-2649

The show is available for purchase at a prepaid cost of \$75.00 (checks made payable to N.E.I.W.P.C.C.) from:

**New England Interstate Water
Pollution Control Commission**

607 Boylston Street
Boston, MA 02116
(617) 437-1524

Region I Continued

ings to formalize and foster compatible state UST regulatory programs.

Through this interstate communication, the first tank pioneers were able to lead the way for others to follow. For example, New Hampshire was able to craft its draft underground tank regulation within one year by picking key components from New York's, Connecticut's and Rhode Island's packages. These States programs had already been through 2-3 years of assessing and defining the UST problem. Finally, NEIWPCC made a regional effort to increase public awareness of UST issues through production of a brochure and a slide-tape show.

Region I got officially involved in a UST problem in 1981 when Federal enforcement efforts were used to remedy a leak problem. In Richmond, Rhode Island, a sub-division of 37 homes with private, on-site wells, was impacted by gasoline releases from multiple sources. At the time, EPA had no official authority to correct such situations. But, through the innovative use of federal imminent hazardous authorities, the Regional office was able to effectively negotiate a three-party voluntary settlement involving two major oil companies and the State. The settlement secured emergency temporary bottled water and eventually provided an alternate community well system for the area. The Federal UST program now gives the Regions a clearer mandate to mitigate these releases. ■

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