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CRS Report for Congress

Leaking Underground Storage Tanks: Prevention and Cleanup

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Summary

To address a nationwide water pollution problem caused by leaking underground storage tanks (USTs), Congress created a leak prevention, detection, and cleanup program in 1984. In 1986, Congress established the Leaking Underground Storage Tank (LUST) Trust Fund to help the Environmental Protection Agency (EPA) and states to remediate leaking petroleum USTs where owners failed to do so, and to oversee LUST cleanup activities by responsible parties. Despite much progress in the program, challenges have remained. A key issue has been that state resources have not met the demands of administering the UST leak prevention program. States have long sought larger appropriations from the trust fund to support the LUST cleanup program, and some also sought flexibility to use fund resources to administer and enforce the UST leak prevention program. Another issue has concerned the detection of methyl tertiary butyl ether (MTBE) in groundwater at many LUST sites and in water supplies. This gas additive was used widely to meet Clean Air Act requirements to reduce auto emissions. However, MTBE is very water-soluble, and, once released, it is more likely to reach water supplies and often is more costly to remediate than conventional gas leaks.

In the Energy Policy Act of 2005 (P.L. 109-58), the 109th Congress expanded the leak prevention provisions in the UST program, imposed new program responsibilities on EPA and states, and authorized use of the LUST Trust Fund for prevention as well as cleanup activities. In the Energy Independence and Security Act of 2007 (P.L. 110-140), the 110th Congress amended the Clean Air Act to authorize EPA to regulate fuels and fuel additives for the purpose of protecting water quality, as well as air quality. This report reviews the LUST program and related issues and developments.

Background

In the 1980s, EPA determined that many of the roughly 2.2 million underground storage tanks (USTs) in the United States, most of them storing petroleum, were leaking. Many other tanks were nearing the end of their useful life expectancy and were expected to leak in the near future. Approximately 50% of the U.S. population relies on ground

water for their drinking water, and states were reporting that leaking underground tanks were the leading source of groundwater contamination.

In 1984, Congress responded to this environmental and safety threat and established a leak prevention, detection, and cleanup program for USTs containing chemicals or petroleum through amendments to the Solid Waste Disposal Act (42 U.S.C. 6901 et seq., also known as the Resource Conservation and Recovery Act (RCRA)). Subtitle I directed EPA to establish operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The universe of regulated tanks was extremely large and diverse, and included many small businesses. Consequently, EPA phased in the tank regulations over a 10-year period (1988 through 1998). Strict standards for new tanks took effect in 1988, and all tanks were required to comply with leak detection regulations by late 1993. All tanks installed before 1988 had to be upgraded (with spill, overfill, and corrosion protection), replaced, or closed by December 22, 1998.

In 1986, Congress established a response program for leaking petroleum USTs through the Superfund Amendments and Reauthorization Act (P.L. 99-499), which amended RCRA Subtitle I. The amendments authorized EPA and states to respond to petroleum spills and leaks, and created the Leaking Underground Storage Tank (LUST) Trust Fund to help EPA and states cover the costs of responding to leaking USTs in cases where UST owners or operators do not clean up a site. EPA and the states have used the annual LUST Trust Fund appropriation mainly to oversee and enforce corrective actions performed by responsible parties. They also use the funds to conduct corrective actions where no responsible party has been identified, where a responsible party fails to comply with a cleanup order, in the event of an emergency, and to take cost recovery actions against parties. EPA and states have been successful in getting responsible parties to perform most cleanups. In these cases, the cleanup costs typically have been paid for by a state fund (discussed below), the responsible party, and/or private insurance.

State Funds. The 1986 law also directed EPA to establish financial responsibility requirements to ensure that UST owners and operators are able to cover the costs of taking corrective action and compensating third parties for injuries and property damage caused by leaking tanks. As mandated, EPA issued regulations requiring most tank owners and operators selling petroleum products to demonstrate a minimum financial responsibility of $1 million. Alternatively, owners and operators could rely on state assurance funds to demonstrate financial responsibility, saving them the cost of purchasing private insurance. Most states established financial assurance funds. Unlike the federal LUST Trust Fund, state funds often are used to reimburse financially solvent tank owners and operators for some or all of the costs of remediating leaking tank sites. Revenues for state funds typically have been generated through gas taxes and tank fees and, collectively, these funds have provided more cleanup funds than the LUST Trust Fund. A June 2007 survey of states showed that, cumulatively, states had collected and spent roughly $15.45 billion through their funds. During 2007, state funds collected $1.5 billion in annual revenues and paid out a total of $1.01 billion, while outstanding claims against state funds reached $2.68 billion, up from $1.32 billion in 2006. The number of sites with claims increased from 143,827 in 2004 to 162,699 in 2007. While 10 states had made a transition to private insurance, 20 states had extended their fund's original sunset date to address the backlog of leaking tanks. (See the *2007 State Financial Assurance Funds Survey* at [http://www.astswmo.org].)

LUST Trust Fund: Funding and Uses

The LUST Trust Fund is funded primarily through a 0.1 cent-per-gallon motor fuels tax that began in 1987. The Energy Policy Act of 2005 (P.L. 109-58, H.R. 6) extended the tax through March 2011. During FY2007, the tax generated $228.26 million, and the trust fund earned $117.58 million in interest on the balance in the fund. At the end of FY2007, the trust fund's net assets totaled $2.93 billion.

Congress has appropriated funds annually from the trust fund to support the LUST response program. EPA roughly estimates that the average cost of cleaning up a leaking tank site is $125,000, and through March 2007, 108,766 releases still needed remediation. Although EPA expects that private parties will pay for most cleanups, states estimate that it will cost $12 billion to remediate at least 54,000 tank sites that lack viable owners.[1]

To support the LUST cleanup program, Congress provided from the trust fund roughly $72 million for FY2006 and FY2007.[2] The Consolidated Appropriations Act, 2008 (P.L. 110-161), included approximately $72 million from the LUST Trust Fund. Similarly, the request for FY2009 is $72.2 million.

In recent years, EPA has allocated approximately 81% (roughly $58 million) of the annual trust fund appropriation to the states in the form of cooperative agreements and 4% to support LUST-eligible activities on Indian lands. EPA has used the remaining 15% for its program responsibilities. The Energy Policy Act of 2005 (P.L. 109-58, §1522) required EPA to allot least 80% of the LUST Trust Fund appropriation to the states. Under cooperative agreements with EPA, the states receive grants to help cover the cost of administering the LUST program. States have used most of their LUST program grants to hire staff for technical oversight of corrective actions performed by responsible parties. Typically, they have used about one-third of the LUST money they received for cleaning up abandoned tank sites and undertaking emergency responses.

EPA uses its portion of the appropriation to oversee cooperative agreements with states, implement the LUST corrective action program on Indian lands, and support state and regional offices. EPA priorities in the LUST program have included reducing the backlog of confirmed releases; promoting better and less expensive cleanups; providing assistance to Indian tribes; assisting with the cleanup of more complicated sites, especially sites contaminated with MTBE; and implementing the Energy Policy Act provisions.

Program Accomplishments and Issues

EPA reports that since the federal underground storage tank program began, more than 1.68 million of the roughly 2.2 million petroleum tanks subject to regulation have been closed and, overall, the frequency and severity of leaks from UST systems have been reduced significantly. As of March 31, 2008, 625,534 tanks remained in service and

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[1] Government Accountability Office, *Leaking Underground Storage Tanks: EPA Should Take Steps to Better Ensure the Effective Use of Public Funding for Cleanups*, GAO-07-152, 2007.

[2] For FY2006, Congress provided another $15 million in supplemental appropriations for cleaning up releases from tanks damaged by hurricanes Katrina and Rita.

subject to UST regulations, 478,457 releases had been confirmed, and 453,065 cleanups had been initiated. Nearly 78% (371,880) of all reported releases had been cleaned up, and the backlog of sites requiring remedial action dropped to 106,577 sites. In FY2007, 7,570 releases were newly confirmed, and 13,862 corrective actions completed. In the first half of FY2008, 3,294 releases were confirmed, and nearly 6,000 cleanups were completed.[3]

Methyl Tertiary Butyl Ether (MTBE). In the 1990s, as states and EPA were making solid progress in addressing tank leaks, a new problem emerged. The gasoline additive MTBE was being detected at thousands of LUST sites and in numerous drinking water supplies, usually at low levels. Gasoline refiners had relied heavily on MTBE to produce gasoline that contained oxygenates, as required by the 1990 Clean Air Act Amendments as a way to improve combustion and reduce mobile source emissions. Once released into the environment, however, MTBE moves through soil and into water more rapidly than other gasoline components. Because of its mobility, MTBE is more likely to reach drinking water supplies, and it often is more difficult and costly to remediate than conventional gasoline. Although MTBE is thought to be less toxic than some gasoline components (such as benzene), even small amounts can render water undrinkable because of its strong taste and odor. Also, in 1993, EPA's Office of Research and Development concluded that the data support classifying MTBE as a possible human carcinogen.[4] Although EPA has not done so, at least seven states have set drinking water standards for MTBE, and many states have established cleanup standards or guidelines. At least 25 states have enacted limits or bans on the use of MTBE in gasoline.

At least 42 states require testing for MTBE in ground water at LUST sites. In a 2000 survey, 31states reported that MTBE was found in ground water at 40% or more of LUST sites in their states; 24 states reported MTBE at 60% to 100% of sites. An update of this survey found that many sites had not been tested for MTBE and that most states did not plan to reopen closed sites to look for MTBE.

Implementation and Compliance Issues. EPA estimated that by FY2001, 89% of USTs had upgraded tank equipment to meet federal requirements. However, the Government Accountability Office (GAO) reported that because of poor training of tank owners, operators, and other personnel, about 200,000 (29%) USTs were not being operated or maintained properly, thus increasing the risk of leaks and ground water contamination. GAO also reported that only 19 states physically inspected all their tanks every three years (the minimum EPA considered necessary for effective tank monitoring) and that, consequently, EPA and states lacked the information needed to evaluate the effectiveness of the tank program and take appropriate enforcement actions.[5] Among its initiatives to improve compliance, EPA revised the definition of compliance ("significant operational compliance") to place greater emphasis on the proper operation and maintenance of tank equipment and systems. In June 2008, EPA reported that,

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[3] For state-by-state information, see [http://www.epa.gov/oust/cat/camarchv.htm].

[4] U.S. Environmental Protection Agency, *Assessment of Potential Health Risks of Gasoline Oxygenated with Methyl Tertiary Butyl Ether (MTBE)*, EPA/600/R-93/206, 1993.

[5] U.S. GAO, *Environmental Protection: Improved Inspections and Enforcement Would Better Ensure the Safety of Underground Storage Tanks*, GAO-01-464, May 2001, pp. 2-6. Also see *Environmental Protection: More Complete Data and Continued Emphasis on Leak Prevention Could Improve EPA's Underground Storage Tank Program*, GAO-06-45, November 2005.

nationwide, 77% of recently inspected UST facilities were in compliance with the release *prevention* regulations, 73% were in compliance with the leak *detection* regulations, and 65% of facilities had complied with the combined requirements.

Legislation

The 109th Congress addressed LUST and MTBE issues in the Energy Policy Act of 2005 (EPAct, P.L. 109-58, H.R. 6). The act revised the UST leak prevention and cleanup programs (Title XV, Subtitle B) and extended the 0.1 cent-per-gallon motor fuels tax that finances the LUST Trust Fund through March 2011 (§ 1362).

MTBE in the Energy Policy Act of 2005. The House version of H.R. 6 had included a retroactive safe harbor provision to protect manufacturers and distributors of fuels containing MTBE or renewable fuels from product liability claims. This provision was opposed by water utilities, local government associations, and many states. Opponents argued that providing a liability shield would effectively leave gas station owners liable for cleanup, and as these businesses often have few resources, the effect of the provision would have been that the burden for cleanup would fall to local communities, water utilities, and the states. Proponents argued that a safe harbor was merited because MTBE was used heavily to meet federal clean air mandates. They further argued that the focus should be placed on preventing leaks from USTs, which have been the main source of MTBE contamination. (For more information on LUST and MTBE provisions in P.L. 109-58, see CRS Report RL32865, *Renewable Fuels and MTBE: A Comparison of Selected Provisions in the Energy Policy Act of 2005 (P.L. 109-58 and H.R. 6)*, by Brent D. Yacobucci, et al.) Ultimately, the conferees dropped the safe harbor provision and a provision to ban MTBE. P.L. 109-58 also repealed the Clean Air Act oxygenated fuel requirement that had prompted extensive use of MTBE.

Underground Storage Tank Compliance Act. Title XV, Subtitle B, of EPAct comprised the Underground Storage Tank Compliance Act (USTCA). The USTCA amended RCRA Subtitle I to add new leak prevention and enforcement provisions to the UST regulatory program and imposed new requirements on states, EPA, and tank owners. The USTCA requires EPA, and states that receive funding under Subtitle I, to conduct compliance inspections of tanks at least once every three years. It also requires states to comply with EPA guidance prohibiting fuel delivery to ineligible tanks, to develop training requirements for UST operators and individuals responsible for tank maintenance and spill response, and to prepare compliance reports on government-owned tanks in the state. Additionally, states must require either that new tanks located near drinking water wells are equipped with secondary containment, or that UST manufacturers and installers maintain evidence of financial responsibility to provide for the costs of corrective actions. (USTCA implementation information and documents are available online at [http://www.epa.gov/oust/fedlaws/epact_05.htm].)

The USTCA authorized the appropriation of $155 million annually for FY2006 through FY2011 from the LUST Trust Fund for states to use to implement new and existing UST leak prevention requirements and to administer state programs. However, the energy act's tax extension language (§1362) prohibited the use of trust fund appropriations for any new purposes. Thus, while EPAct greatly expanded state responsibilities, it prohibited the use of LUST Trust Fund money to support implementation of these mandates. To address this issue, the 109th Congress amended the

Internal Revenue Code to allow the trust fund to be used for prevention and inspection activities (P.L. 109-433). The USTCA also includes new authorizations of appropriations to hasten the cleanup of leaking tanks and related MTBE contamination. It authorizes LUST Trust Fund appropriations of $200 million annually for FY2006 through FY2011 for EPA and states to administer the LUST cleanup program, and another $200 million annually for FY2006 through FY2011, specifically for addressing MTBE and other oxygenated fuels leaks (e.g., ethanol).

The 110th Congress. Despite the EPAct's new funding authority for LUST cleanup activities and concern about cleanup costs related to MTBE, LUST Trust Fund requests and appropriations for the LUST program have remained at roughly $72 million. For FY2008, the President requested $72.4 million from the LUST Trust Fund for cleanup activities, and another $22.3 million through the State and Tribal Assistance Grants (STAG) account for leak prevention activities. The Senate Committee on Appropriations similarly recommended $72.49 million from the trust fund and $22.5 million from the STAG account (S.Rept. 110-91). In contrast, the House report for EPA's FY2008 funding bill, H.R. 2643 (H.Rept. 110-187) noted that the EPAct authorized the prevention grants to be funded from the LUST Trust Fund. The House combined the funding to reflect the uses of the trust fund authorized by EPAct. The House-passed bill proposed $117.9 million from the trust fund for cleanup and leak prevention (including tank inspection) activities. This amount included $10 million more than requested for LUST cooperative agreements, and $15.7 million more for UST grants authorized by EPAct (which, when combined with the funds moved from the STAG account, would have provided a total of $35.5 million for prevention activities). Noting this increase in UST funding, the House rejected EPA's request that Congress revise the state inspection requirements under EPAct. The Consolidated Appropriations Act, 2008, followed the House approach and included a total of $105.8 million for UST and LUST programs.

For FY2009, EPA requested $72.3 million from the trust fund for the LUST program. From general revenues, EPA requested $35 million to help states meet new EPAct responsibilities, including 1) triennial tank inspections, 2) operator training, 3) prohibition of delivery to non-complying tanks, and 4) secondary containment or financial responsibility for tank manufacturers and installers. In an effort to reduce EPAct costs to states, EPA submitted legislative language to allow states to use alternative mechanisms (e.g., the Environmental Results Program) to meet the inspection mandate.

An emerging UST issue concerns the impact that biofuels may have on storage tank infrastructure. The renewable fuel mandates in the Energy Policy Act and the Energy Independence and Security Act of 2007 (P.L. 110-140) have presented new technical issues for USTs and for fuel storage and delivery infrastructure generally. Ethanol, for example, is more corrosive than gasoline, thus increasing the risk of leaks in tank systems. The House has passed H.R. 547 (H.Rept. 110-7) to require EPA to establish a program to research and develop materials that could be added to biofuels to make them more compatible with existing infrastructure used to store and deliver petroleum-based fuels. In an effort to avoid new water quality problems, P.L. 110-140 amended the Clean Air Act to allow EPA to regulate fuels and fuel additives to protect water quality as well as air quality. (For further discussion of biofuels issues, see CRS Report RL33928, *Ethanol and Biofuels: Agriculture, Infrastructure, and Market Constraints Related to Expanded Production*, by Brent Yacobucci and Randy Schnepf.)