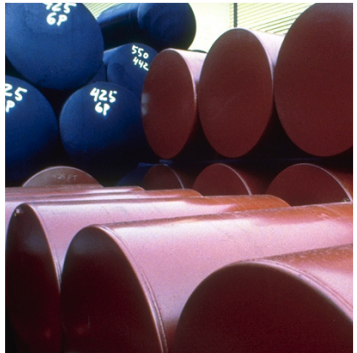
EPA
United States
Environmental Protection
Agency

Underground Storage Tank Program

25 YEARS OF PROTECTING OUR LAND AND WATER

25
YEARS



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25 YEARS

OVERVIEW 2
25 Years Of Progress Through Strong Partnerships

INSPECTIONS 4
Our Program's Ounce Of Prevention Is Worth A Pound Of Cure

REUSE 6
Reusing Abandoned Gas Stations Is Helping To Revitalize Neighborhoods

TIMELINE 8
Milestones In The Underground Storage Tank Program

REGULATIONS 10
UST Regulations Then and Now

NEW FUELS 12
Storing New Fuels In Old Tanks Can Be A Challenge

SUSTAINABILITY 14
Greening Underground Storage Tank Operations And Cleanups

FUTURE 16
Working Together Toward A Greener America

25 Years Of Progress Through Strong Partnerships

In 1983, CBS's *60 Minutes* aired a story titled "Check the Water," which brought national attention to families suffering from the effects of a gasoline leak. Less than a year later, Congress passed and the President signed a new law directing EPA to protect our nation's land and water from underground storage tank (UST) leaks. At the time, there were approximately two million underground storage tanks. Twenty-five years later, two-thirds of these tanks have closed, leaving approximately 623,000 tanks at 235,000 gas stations and other facilities still operating.

Preventing new releases from underground tanks and cleaning up existing releases have been key to the program's success and are an important part of protecting our environment. Even a small amount of petroleum released from an underground tank can contaminate groundwater, which is the drinking water source for nearly half of all Americans. Even more alarming, states have reported that petroleum released from underground tanks is the most common threat to our country's groundwater.

For the past 25 years, EPA, states, tribes, and regulated industry have been working together to protect our land and water by preventing and cleaning up releases from underground tanks. Because of this strong partnership, the nation's tank programs have:

- Properly closed almost 1.7 million substandard underground storage tanks;
- Reduced the annual number of underground storage tank releases from almost 67,000 in 1990 to just over 7,300 in 2008; and
- Cleaned up over 377,000 releases, more than 80 percent of all reported releases.

Despite this great progress, challenges remain. The underground storage tank program's priorities are to: meet the mandate to inspect all 623,000 federally-regulated tanks every three years, boost compliance rates to minimize future releases, and clean up old and new tank leaks. Beyond these core activities, it is important to also encourage sustainable reuse of thousands of abandoned gas stations, ensure safe storage of ethanol-blended fuels and biofuels, update our 20-year-old regulations, and solve new problems that have yet to emerge.

EPA developed this booklet to celebrate the progress so far and outline the challenges ahead. This booklet focuses on five experiences that describe how EPA and our tank partners are making a difference through conducting inspections; reusing abandoned gas stations; adapting to new fuels; updating underground storage tank regulations; and promoting green gas stations, green cleanups, and other sustainable strategies. For additional information about these activities and more, please visit EPA's underground storage tanks Web site at www.epa.gov/oust.

Inspecting a gas station

Inspections: Our Program's Ounce Of Prevention Is Worth A Pound Of Cure

Twenty-five years ago there were no federal tank regulations, and inspections were rare. In a few states, an inspector or local fire marshal would occasionally conduct an on-site underground storage tank inspection. But in most places, buried tanks were out of sight and out of mind, typically not inspected for a decade or more, if at all.

In the 25 years that have passed, a lot has changed. Today, with the passage of the Energy Policy Act of 2005, every underground tank must be inspected every three years. With 623,000 tanks, that's a huge task requiring a significant commitment. Fortunately, EPA and our state and tribal partners are making such a commitment. Many states are hiring new inspectors; some are taking advantage of portable, state-of-the-art equipment to improve efficiency. Other states are using contract or third-party inspections; still others are using a mix. In Indian country over the past two years, EPA has issued inspector credentials to several tribal inspectors. This allows the tribal inspector to conduct an inspection on behalf of EPA and is helping to ensure that all tanks in Indian country will be inspected every three years.

Although we are only in the first three-year inspection cycle, our collective efforts are starting to pay off. After a slight decline, compliance rates are beginning to improve and fewer new leaks are being reported each year. And by continuing our investment in inspections, EPA hopes to see even fewer new releases and a bigger payoff. Preventing just one new release will save $125,000, the estimated average cost to clean up a contaminated site. So it's easy to see that an upfront investment in inspections – our program's ounce of prevention – is certainly worth a pound of cure

Measuring the product level in a tank

Developing Federal Credentials For Tribal Inspectors

Designating tribal inspectors as authorized representatives of EPA to inspect underground tanks can help increase the geographic coverage and frequency of inspections in Indian country. It also helps enhance relationships and increase the capabilities of tribal inspectors. In 2007, EPA regions first began issuing federal credentials, and so far inspectors from the Eastern Band of the Cherokee Indians, Navajo Nation, Nez Perce Tribe, and Shoshone-Bannock Tribes are credentialed. With federal credentials, these individuals can conduct federal underground storage tank inspections at their tribal facilities and potentially other facilities. EPA will continue to work with tribes to train other tribal inspectors and issue additional credentials.

Inspecting a spill bucket

Third-Party Inspections Help States Achieve Inspection Goals

Years ago, Pennsylvania developed an innovative concept to augment inspection staff, increase field presence, and achieve the goal of increasing the number of inspections done in that state each year. The concept – a third-party inspection program – is a cost-effective way to increase the number of eligible inspectors without increasing the number of state-paid inspectors. In a third-party inspection program, state-authorized third-party inspectors are paid by the underground tank owners to perform on-site inspections. Alaska, Iowa, Maine, Maryland, and Montana have joined Pennsylvania and are using third-party inspectors to achieve their inspection goals. This is the kind of innovative approach that has been a hallmark of the underground tank program.

Inspecting under the dispenser

Reusing Abandoned Gas Stations Is Helping To Revitalize Neighborhoods

Along Kansas City, Missouri's Prospect corridor, restaurants now line the streets. The Steptoe Battlefield State Park in Rosalia, Washington has a new visitor center. And several families are now living in Habitat for Humanity homes in Oakland, California. None of these stories would be particularly remarkable, except that all of these activities are taking place on former brownfields sites with petroleum contamination.

For too many years, these and other properties were hiding in plain sight, attracting crime but not investors. Fortunately, these and other old, vacant properties are now valuable real estate and a source of revenue and pride for the community. Thousands of other vacant properties just like these are scattered along our highways and in our neighborhoods. Many of these abandoned gas stations are so commonplace that some people no longer even notice them, and to others they are too small to worry about.

But to many people, these old abandoned corner gas stations provide large cities and small towns with opportunities to clean up and reinvigorate neighborhoods. Between 2000 and 2002, EPA funded 50 USTfields pilots to clean up and reuse many of these abandoned properties. In 2002, Congress passed a Brownfields Law and over six years, EPA has provided almost $130 million to assess and clean up abandoned gas stations and other petroleum brownfields sites, resulting in new parks, community centers, restaurants, retail spaces, police stations, and fire stations.

Today, EPA has a new Petroleum Brownfields Action Plan to build on this progress. Through this plan, EPA, states, tribes, local communities, and the private sector are working together to return even more abandoned gas stations back to productive use and giving neighborhoods new hope. For a copy of the action plan, please visit EPA's underground storage tanks Web site at www.epa.gov/oust/rags/petrobfactionplan.pdf.

Trenton, New Jersey: Abandoned Gas Station To New Firehouse

Using grant funds, New Jersey and Trenton successfully partnered to remove four underground storage tanks and contaminated soil at an abandoned gas station site and transform it into the much needed West Ward Firehouse. This project demonstrates that unsightly, abandoned properties can be cleaned up and reused to benefit the community's residents and enhance the aesthetics and environment of the neighborhood.

Abandoned gas station

Site reused as a firehouse

Zebulon, North Carolina: Dilapidated Property To New Business

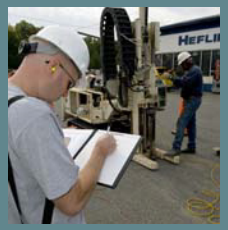
This property consisted of four parcels of land totaling 1.75 acres with four existing structures: a former restaurant, an auto sales dealership, an auto service garage, and a hair salon. The soil and groundwater were contaminated with petroleum from above ground tanks used by previous bus and gas stations and surrounding off-site leaking underground storage tanks (LUSTs). Underground storage tanks were also discovered on site during the remediation of the petroleum-contaminated soil. The site was redeveloped into a stand-alone drug store near the town center of Zebulon.

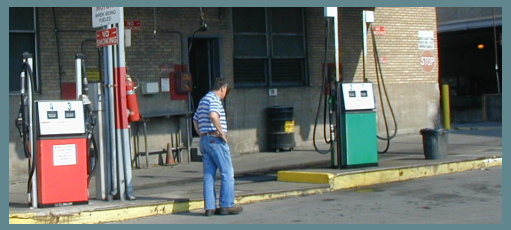
Petroleum-contaminated property

Site reused as a drug store

Milestones In The Underground Storage Tank Program

1984	1986	1988	1990	1993	1998	2005	2009
National UST Program	LUST Trust Fund	National UST Regulations	EPA Approves First State UST Program	Leak Detection Deadline	Upgrade or Replace Deadline	Energy Policy Act	25th Anniversary





TIMELINE

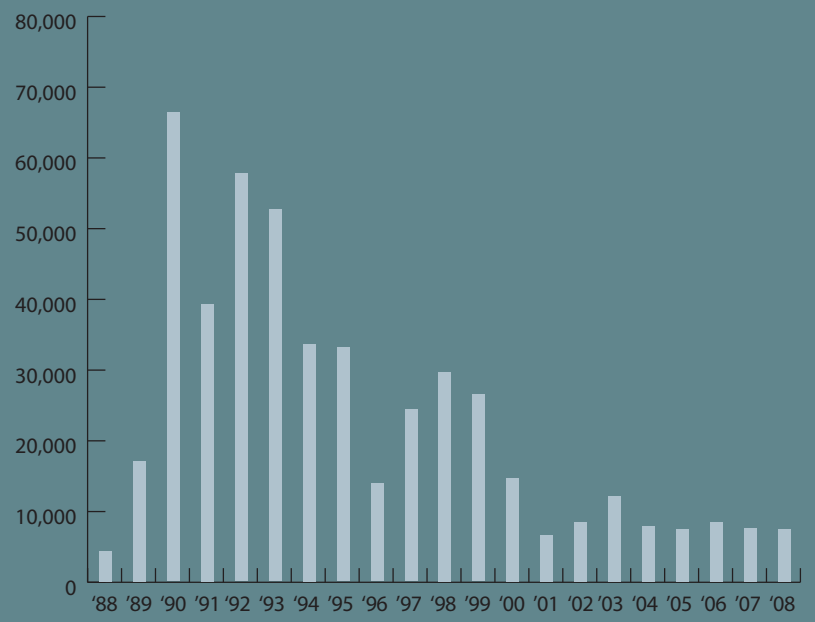
UST Regulations Then and Now

In the early 1980s, when Congress directed EPA to develop a comprehensive regulatory program for underground storage tanks, Ron Brand, EPA's first underground storage tank program director said, "We wanted to be sure that the regulations were practical…we always thought of the 16-year old gas station worker measuring the tanks at 6 a.m. on a cold day…".

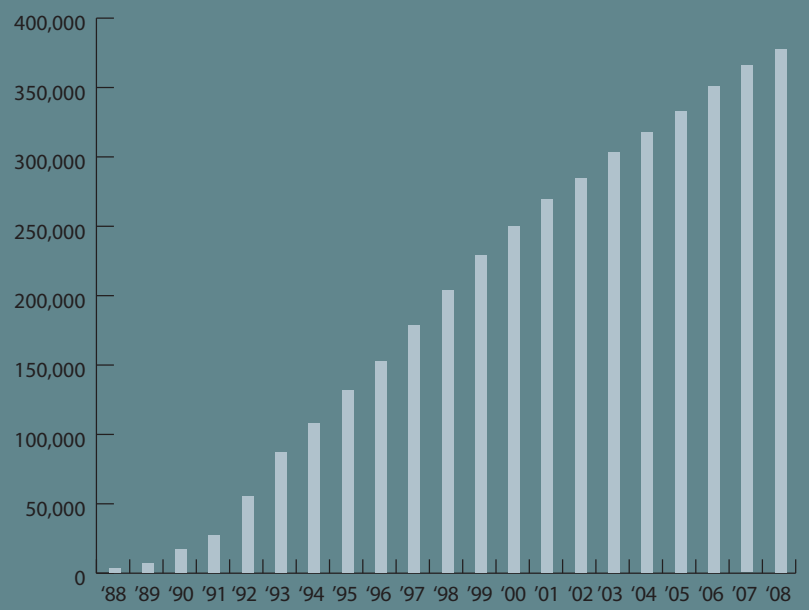
EPA knew 25 years ago that our success would depend on states, tribes, owners and operators, and many others to implement the new program. With that in mind, EPA crafted regulations that provided a basic level of protection for everyone by preventing, detecting, and cleaning up leaks. Because of the large and diverse regulated universe – from Fortune 500 corporations to small, one-station owners – EPA provided flexibility for implementing the requirements. As a result, for the past 25 years, the regulations have served our program and country well. EPA has seen a steady decline in reported releases, expanded use of better tank systems, and continued progress cleaning up leaks.

In the two decades of implementing the tank regulations, underground storage tank systems have changed. The old, wooden dipsticks have been replaced with automatic tank gauging; bare steel tanks replaced with double-walled systems; and green gas stations are now built with energy-efficient and environmentally-friendly equipment. But the federal underground storage tank regulations have not changed, and some of the requirements are out of date. Fortunately, with the enactment of the Energy Policy Act of 2005, we now have new tools and new requirements for the next quarter century of the program.

To take full advantage of today's better technology and move the program forward, EPA is looking beyond the Energy Policy Act. At the quarter century mark, EPA began a process to revise, update, and improve the federal tank regulations. Although the process is just beginning, the Agency plans to issue a proposed rule in spring 2010, followed by a final regulation that will carry the program well into the future.



Annual UST Releases 1988-2008



Cumulative LUST Cleanups Completed 1988-2008

Storing New Fuels In Old Tanks Can Be A Challenge

A quarter century ago, corn was a popular side dish at summer barbecues and vegetable oil was used for cooking. Now, corn and vegetable oil are new ingredients in fuel for our cars and trucks. Although several mid-western states have used biofuels – such as ethanol made from corn – for decades, it is only recently that our nation is seeing widespread use of alternative fuels.

About ten years ago, EPA saw an increase in drinking water contaminated with methyl tertiary-butyl ether (MTBE), a chemical added to gasoline to make it burn cleaner and improve air quality. Since underground storage tanks at facilities such as gas stations had historically stored gasoline, diesel, or other petroleum products, this increase in MTBE contamination led to heightened awareness of the potential risks posed by fuel additives. And EPA is facing this challenge again, but with biofuels instead of MTBE.

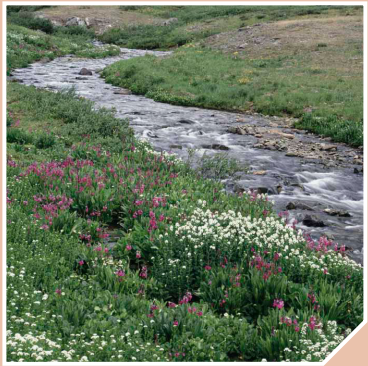
Corn: the primary source of fuel-grade ethanol

Many gas stations across the country now sell gasoline blends containing biofuels to help improve air quality and reduce our country's dependence on foreign oil. But because these blended products have significantly different characteristics than gasoline and diesel, alternative fuels present new challenges to underground tank programs. We need to adapt our storage strategies for new fuels and prevent a new generation of releases. In order to keep our land and water free of contamination, EPA and states are working with tank owners to address the compatibility of biofuels with the tank systems in which they are stored.

MTBE Contaminated Water At Roselawn, Indiana School

When petroleum containing MTBE leaked from underground storage tanks, it contaminated soil and, in some instances, groundwater, which is a source of drinking water for many Americans. MTBE makes drinking water supplies undrinkable because of its offensive taste and odor, which is similar to turpentine.

In Roselawn, Indiana, a public elementary school is located about one-third of a mile from a gas station. After receiving a citizen's complaint, EPA, Indiana's Department of Environmental Management Tank Program, and Indiana's Newton County Health Department investigated a strong smell of petroleum emanating from a water faucet in the gas station's rest room. After further investigation in the neighborhood, including the elementary school, EPA found levels of MTBE in the school's well water approximately 10 times higher than EPA's drinking water advisory for MTBE levels. EPA directed the school to immediately stop using the water for drinking, cafeteria cooking, and cleaning. Without the swift response, quick intervention, and combined efforts of state and local authorities and EPA, children at the Roselawn elementary school might have unknowingly continued to ingest high levels of MTBE.



Safe drinking water is a critical resource

As are the children who drink the water

Greening Underground Storage Tank Operations And Cleanups

Shoppers have been choosing between paper and plastic bags for years. Now, with many shoppers choosing reusable cloth bags, the choice is becoming moot. In supermarkets all across the country, consumers are incorporating sustainability and environmental stewardship into their daily lives.

EPA is also embracing the need for all of us to become better stewards of the environment. In the underground storage tank program, we are working with states and tribes to prevent and clean up leaking underground storage tank releases, and incorporate sustainability and environmental stewardship in the daily work of tank management. Efforts across the country have resulted in examples that demonstrate how cleaning up the environment can make good business sense. Today more businesses, such as the Zarco 66 Earth Friendly Fuels and SeQuential biofuels stations highlighted on the next page, are building new green gas stations that are energy efficient and environmentally friendly.

Applying green strategies to underground tank cleanups means more than simply using a green backhoe. It means using natural resources and energy efficiently; reducing the collateral impacts of a cleanup on the soil, water, and air; and minimizing or eliminating pollution at the source. It's a new way of thinking for some, but worth the effort. A green cleanup may save energy, fuel, and dollars over traditional methods. And with almost 103,000 underground petroleum tank releases in the cleanup backlog, we have a great opportunity to reduce the footprint of cleanup and promote sustainability.

Solar panels on a green roof

Green Gas Stations Are Our Future

In Lawrence, Kansas, the Zarco 66 Earth Friendly Fuels station showcases the blending of biodiesel and ethanol fuels at the pumps; demonstrates electricity generation with a wind turbine; and features a green roof, an energy-efficient lighting scheme, and recycling bins. Video screens on fuel dispensers allow customers to learn about the benefits of biofuels, roof gardens, and other environmental topics while filling their vehicles. The on-site coffee shop uses Energy Star-rated appliances and biodegradable corn-based cups. A rain garden and solar panels will be installed at the facility. This innovative fueling station occupies a former gas station site that had a gasoline release in the mid-1990s.

Zarco 66 Earth Friendly Fuels station

In Eugene, Oregon, a SeQuential biofuels station sells an assortment of biofuels for gasoline and diesel vehicles. The plant that supplies these biofuels is minimizing its carbon dioxide emissions by reducing the amount of fuel shipped from great distances and recycling cooking oil from restaurants throughout Oregon and Washington. This biofuels station is powered using 100 percent renewable energy, uses grassy retention areas to contain stormwater runoff, and has a living roof to reduce the flow of stormwater. Similar to the Kansas station, this sustainable facility in Oregon occupies a former gas station site that was contaminated with petroleum in the 1990s.

Sequential biofuels station

Working Together Toward A Greener America

With half the country depending on groundwater as a drinking water source and leaks from underground storage tanks the most common groundwater threat, it is essential that we continue to make progress in preventing and cleaning up leaks. As we celebrate this 25th year of the underground storage tank program and look to the future, EPA will continue to depend on states, tribes, industry, and other partners to meet our latest challenges. Together we've accomplished a lot, but much work remains as we continue to protect our land and water from underground storage tank leaks, while working toward a greener America for future generations.