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Leaking Underground Storage Tanks: A Threat to Public Health & Environment

This report details the threats to public health from leaking underground storage tanks (UST) and key facts on federal and state UST programs.

Leaking USTs are a grave threat to America's groundwater. Gas stations, industries and other entities use USTs to hold toxic material such as gasoline and oil that contain dangerous substances, including benzene, toluene and heavy metals that can cause cancer and harm developing children. USTs can threaten communities as their walls corrode by silently leaking toxins into our drinking water supplies, homes and businesses.

There are 680,000 USTs and a backlog of 130,000 cleanups; 9,000 new leaks are discovered annually. In 2004, UST cleanups declined by 22 percent compared to 2003. Chemicals in USTs can quickly move through soil and pollute groundwater. One gallon of petroleum can contaminate one million gallons of water. One pin-prick sized hole in an UST can leak 400 gallons of fuel a year. More than 100 million people drink groundwater in states where delayed cleanups threaten groundwater quality.

The federal government has $2.4 billion in surplus taxpayer UST cleanup funds collected from a fee on gasoline sales, but the current administration proposes to spend only $73 million to clean up sites in 2006, just 3 percent of surplus funds. The administration should help protect communities by funding more cleanup, prevention and enforcement activities at UST sites.

Given the serious threat to public health from leaking USTs, federal and state governments must undertake five common-sense actions:

1. Fund more cleanups, prevention & enforcement activities;
2. Require secondary containment, leak detection & biannual inspections
3. Enforce protections in states that fail to safeguard communities;
4. Make polluters pay to clean up contamination from leaking USTs, and
5. Ensure that people know about leaking USTs in their communities.

SECTIONS IN THIS REPORT

For more information: Call Grant Cope at (202) 548-6585 or visit http://www.sierraclub.org/toxics/Leaking_USTs/

Photos courtesy of EPA

Leaking Underground Storage Tanks Threaten Drinking Water

Endangering Community Drinking Water

Leaking underground storage tanks ("USTs") are one of the most serious threats to the quality of our nation's groundwater. Fifty percent of the nation's population, and 100 percent in virtually all rural areas, rely on groundwater for drinking water. About 680,000 federally-regulated USTs are buried in urban and rural areas across our nation. Forty-five states have designated USTs are a major threat to groundwater quality. More than 100 million people rely on groundwater for drinking water in states where backlogged USTs cleanups pose a serious threat to groundwater quality.

Tanks Can Leak Toxic Substances

Underground storage tanks hold toxic material, such as gasoline and waste oil, which contain dangerous substances that can cause cancer and harm developing children. Chemicals in USTs can quickly move through soil and pollute groundwater. There is no safe level of exposure to many of these toxic substances.

Backlog and Decline in Needed Cleanups

There is a backlog of 130,000 cleanups at active, federally-regulated USTs. Additionally, officials have not inspected 76,000 closed USTs for contamination or 190,000 unregistered USTs that pose a threat of contamination. Officials find 9,000 new leaks each year. The pace of cleanups has dropped by 22 percent, averaging 23,000 from 1997–2001, to 16,000 since 2001. Cleanups hit a low of 14,285 in 2004.

Inadequate UST Programs Need Help

States usually run UST programs using federal and state fees on fuel sales. However, state programs face billions of dollars in deficits, and current federal funding for inspections, enforcement and cleanups is inadequate. Federal and state UST programs fail to enforce protections that require polluters to immediately clean up dangerous pollution and owners and operators of USTs to show that they can pay for cleanups. Some states have transferred UST cleanup funds for use as general revenue, which can be used for such things as highway construction.

Current Administration Fails to Provide Help

A $1/10^{th}$ of one cent fee on gasoline sales funds oversight and enforcement activities at USTs, and cleanups when polluters do not have the ability to pay or when they refuse to clean up. The federal government has $2.4 billion in surplus funds. However, the current administration proposes to spend only $73 million to clean up UST site in 2006, a mere 3 percent of available funds.

Safeguard Communities with Increased Funding, Prevention and Polluter Pays Protections

The current administration should protect communities by:

1. Funding more cleanups, prevention & enforcement;
2. Requiring secondary containment, leak monitoring and biannual inspection of USTs;
3. Enforcing federal protections in states that fail to provide communities with such protections;
4. Standing by its commitment to make polluters pay to clean up contamination from leaking USTs, and
5. Ensuring that people know about leaking USTs in their communities.

States with Biggest Cleanup Backlog & Population Using Groundwater (GW) for Drinking Water

	State	Backlog in Cleanups	% of Population Using GW	# of People Drinking Groundwater		State	Backlog in Cleanups	% of Population Using GW	# of People Drinking Groundwater
1	FL	17,544	93%	16,144,565	11	OH	3,463	46%	5,305,522
2	CA	15,049	46%	16,331,679	12	IN	3,449	64%	3,967,094
3	MI	9,039	46%	4,651,805	13	MD	3,280	31%	1,711,882
4	IL	8,591	33%	4,220,926	14	GA	2,924	41%	3,655,365
5	NC	6,927	50%	4,253,528	15	AZ	2,597	60%	3,457,788
6	TX	4,577	45%	10,210,470	16	KY	2,522	25%	1,040,626
7	PA	4,456	41%	5,111,392	17	NY	2,297	35%	6,652,572
8	NJ	3,825	53%	4,627,804	18	NE	2,262	87%	1,521,823
9	WI	3,641	70%	3,845,300	19	KS	2,082	50%	1,378,693
10	SC	3,515	45%	1,884,933	20	IA	2,039	78%	2,307,426

Sources: EPA, *FY 2004 Semi-Annual End-of-Year Activity Rpt.* (2004), US Census Bur., *Annual Est. of Pop. for the US*,(2004), EPA, *Safe Drinking Water Act, Sec. 1429* Rpt. for Cong. (1999).

Current Administration Fails to Protect Drinking Water Quality

Leaking underground storage tanks ("USTs") are one of the most serious threats to our nation's drinking water supplies. Despite recent cuts in public health and environmental funding, the federal government has $2.4 billion in surplus funds in the UST program, which can only be spent on cleaning up contamination from USTs.

However, the current administration has requested only 3 percent of these dedicated surplus funds, despite a nationwide 22 percent decline in the pace of cleanups between 2003 and 2004. The federal government should protect public health by using surplus funds to help states across the nation clean up leaking USTs.

Cleanups Protect Public Health

Fifty percent of the nation's population, including virtually 100 percent in rural areas, uses groundwater for drinking water. Leaking USTs threaten groundwater quality in 45 states. These tanks can hold toxins that quickly spreads through soil and water and that can cause cancer and harm developing children.

Congress created the UST program in 1984 to address pollution caused by USTs. In 1986, Congress created a federal UST fund to expedite cleanups and required owners and operators of USTs to demonstrate that they can clean up sites. A 1/10th of one cent fee on gas sales provides the fund with money. Congress also directed EPA to create regulations that all federally-regulated USTs had to meet by 1998.

Contamination Harms Communities

Leaking USTs can threaten community and individual drinking water supplies, contaminate houses and businesses with toxic vapors, pollute local environments for decades and dramatically reduce residential and commercial property values. Contaminated plumes can spread thousands of feet, affecting vast stretches of urban and rural communities.

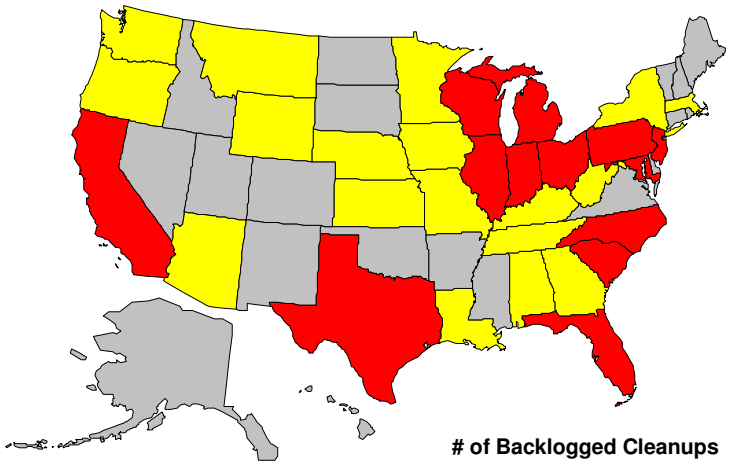
Nationwide Slowdown in Cleanups

There are 680,000 federally-regulated USTs with a backlog of 130,000 cleanups and 9,000 new leaks discovered annually. The pace of cleanups has recently dropped by 22 percent, or an average annual decline of 7,000 cleanups.

Administration Fails to Request Available & Needed Cleanup Funds

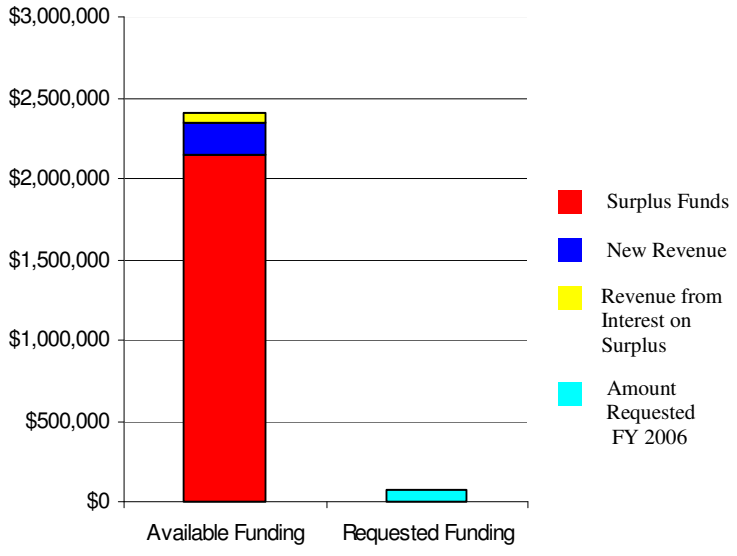
There is $2.4 billion in surplus funds available for cleaning up UST contamination. However, the administration asked for only 3 percent of these funds. A small 10 percent increase in the use of funds would pay for approximately 2000 additional cleanups.

Backlog of 130,000 Cleanups Nationwide



Source: EPA, *FY 2004 Semi-Annual End-of-Year Activity Report* (2004).

Under-Funding Toxic Chemical Cleanups

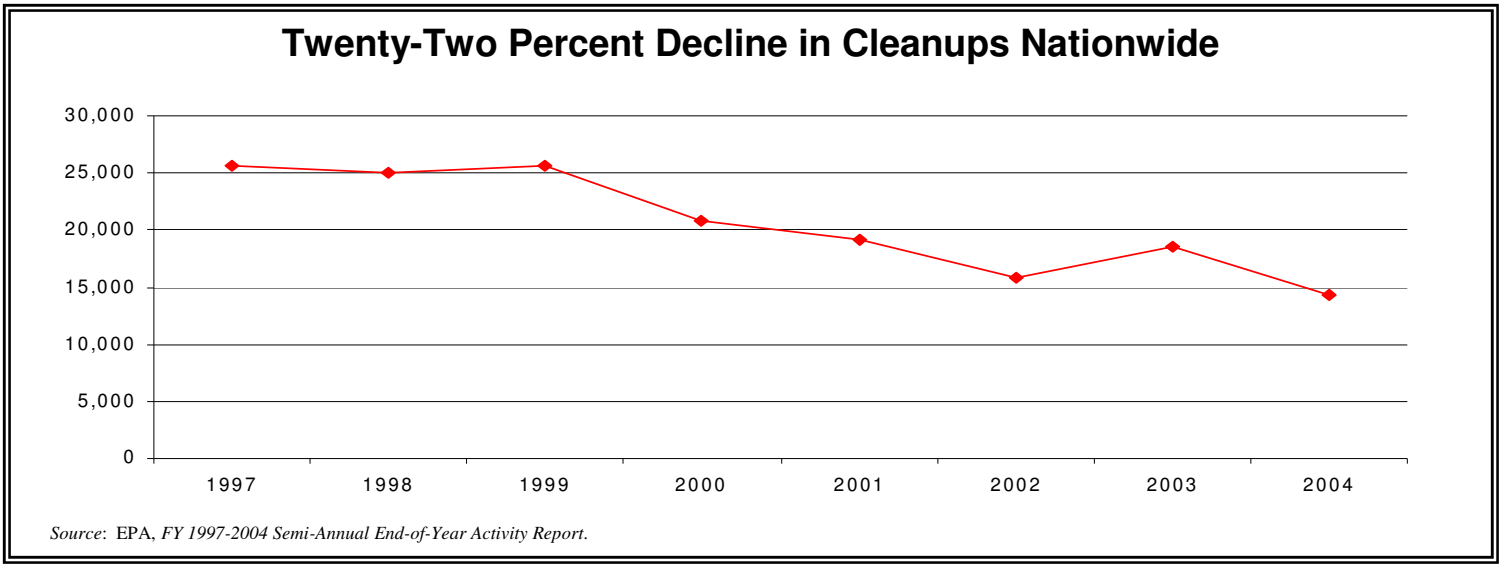


Source: U.S. Department of Treasury, *Budget for FY 2006, Appendix for the EPA* (2005).

Severe Slowdown in the Pace of Cleanups Across the Nation

Following years of progress in cleaning up leaking USTs, national cleanup figures have recently declined. The nation averaged 23,000 cleanups per year from 1997-2001. Cleanups have declined to 16,000 per year since 2001, with cleanups dropping to 14,285 in 2004. Officials discover 6,000 to 12,000 new releases each year. Thus, the number of needed cleanups could begin to grow, erasing years of progress in protecting communities.

State UST programs act as insurance, with taxpayers paying the premium through gas fees, UST owners paying a deductible and taxpayers paying the remaining costs. States have compounded recent fiscal difficulties by using cleanup funds for other purposes. Many program now lack adequate cleanup funds, and some funding mechanisms are set to expire. Thus, federal resources are badly needed to pay for cleanups, prevention and enforcement.



Source: EPA, *FY 1997-2004 Semi-Annual End-of-Year Activity Report.*

100 M. People Drink Groundwater in States With Big Cleanup Backlog

Every state has a backlog of needed cleanups at leaking USTs. However, the 20 states with the largest backlog have a backlog of over 100,000 needed cleanups. These states have between 17,500 and more than 2,000 backlogged cleanups, with an average backlog of 5,000 .

Over 200,000,000 people live in these 20 states. From 93% - 31 percent of the population in each state relies on groundwater for drinking water. Over 100 million people in the 20 states with largest number of backlogged cleanups rely on groundwater for drinking water.

States with Biggest Cleanup Backlog & Population Using Groundwater (GW) for Drinking Water

	State	Cleanup Backlog	% of Population Drinking Groundwater	# of People Drinking Groundwater		State	Cleanup Backlog	% of Population Drinking Groundwater	# of People Drinking Groundwater
1	FL	17,544	93%	16,144,565	11	OH	3,463	46%	5,305,522
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	Backlog	State Population	Pop. Drinking Groundwater
TOTAL	104,079	206,598,754	102,281,194

Ave. Backlog 5,204 **Ave. Add'l. Releases Reported Annually** 9,000

Sources: EPA, *FY 2004 Semi-Annual End-of-Year Activity Rpt.* (2004), US Census Bur., *Annual Est. of Pop. for the US*,(2004), EPA, *Safe Drinking Water Act, Sec. 1429* Rpt. for Cong. (1999).

Over $3 Billion in Under-Funded Cleanups Nationwide

State UST programs act as insurance plans for cleanups by paying for the vast majority of cleanup costs using money collected mostly from state fees on gasoline sales. But some states have *transferred money out of their programs* for purposes other than cleaning up contamination; other programs are refusing to pay for new cleanups; and the legal authority for some fees and programs will soon end. Moreover, at least one state (MI) has *internally reported* a $1.7 billion deficit in *public funding to pay for all known* UST cleanups.

The federal government can play a critical role in helping state programs pay for cleanups, inspections and oversight that protect public health and drinking water. Federal resources can be especially important for cleaning up "orphan" sites where the owners of leaking USTs are bankrupt, refuse to pay for a cleanup or cannot be found. The federal government should provide increased funding to clean up leaking USTs, ensure states are properly managing their cleanup programs and work to strengthen leak-prevention and enforcement efforts at USTs.

Top 20 States with Largest Short-Term Funding Problems

Rank	State	Funding	Cleanup Backlog	Rank	State	Funding	Cleanup Backlog
1	MI	-$1,700	9,039	11	OH	-$5	3,463
2	CA	-$1,029	15,049	12	AL	-$5	1,657
3	WI	-$152	3,641	13	WV	-$1.10	1,214
4	TN	-$95	1,221	14	VT	-$0.5	797
5	CT	-$53	857	15	DE	-$0.30	297
6	NC	-$28		16	AK	$0	885
		-$4	6,927	17	WY	$0.00	1,132
7	MA	-$20	1,294	18	RI	$0.50	260
8	CO	-$14	998	19	MT	$0.51	1,085
9	PA	-$10	4,456	20	KS	$3	2,082
10	VA	-$8	910				

Deficit in Funding for Top 20	-$3,123.48
Backlogged Cleanups in Top 20	57,264

Dollar figures in *millions*. All figures from 2004 except Wisconsin's deficit figure, which is from 2003. A, Commercial tank fund. B, Residential tank fund. See Chart 5 or 6 for a complete description of state funding information.

Source: ATSWMO, 2004 *State Financial Assurance Fund Survey Results* (2004), EPA, *FY 2004 Semi-Annual End-of-Year Activity Report* (2004) and documents from the States of Michigan, Vermont and Tennessee on file with the author.

Twenty-Four States Fail to Meet National Average for Cleanups

Nationally, 71 percent of all confirmed releases from USTs are cleaned up. However, 24 states have failed to meet this national cleanup average. Failure to meet this important measure of progress can result from a lack of funding, a large number of cleanups involving ground-water contamination, a failure to vigorously enforce laws requiring cleanups or a combination of these and other factors. Increased federal oversight, enforcement and resources can help address such failures and increase protections for public health.

States Below National Average in Cleanups

Rank*	State	Below Average	Cleaned Up	Rank	State	Below Average	Cleaned Up	Rank*	State	Below Average	Cleaned Up
1	FL	-40%	31%	8	NJ	-12%	59%	17	CT	-7%	64%
2	WY	-28%	43%	10	AK	-10%	61%	17	IA	-7%	64%
3	KS	-17%	54%	10	IL	-10%	61%	19	CA	-6%	65%
4	MI	-15%	56%	10	NH	-10%	61%	20	WA	-4%	67%
5	IN	-14%	57%	10	LA	-10%	61%	20	PA	-4%	67%
5	WV	-14%	57%	14	NE	-9%	62%	22	AZ	-3%	68%
7	VT	-13%	58%	14	MT	-9%	62%	23	DC	-2%	69%
8	SC	-12%	59%	14	NM	-9%	62%	24	NC	-1%	70%

Source: EPA, *FY2004 Semi-Annual End-of-year Activity Report* (2004). *Rankings demonstrate ties between states.

Dangerous Chemicals Leak from Underground Storage Tanks

Leaking underground storage tanks can hold substances such as fuel (e.g. gasoline or diesel), used oil and other toxic substances. Leaking tanks can contain dozens of dangerous chemicals that can contaminate groundwater, seep into homes and pose a risk of explosion.

Gasoline is a complex blend of several hundred compounds. Once tanks leak, many of these contaminants can move rapidly through surrounding soil, quickly contaminate large quantities of groundwater and seep into surface water, such as lakes and rivers.

Potential Contaminants at Leaking Underground Storage Tanks Site

Toxic Substance	Health Effects	Health-Based Drinking Water Goal	Pollutant Class	From	Mobility in Soil
Benzene	Causes cancer and adversely effects developing children and the reproductive system. Suspected of harming the nervous (i.e. brain), cardiovascular (i.e. heart and blood vessels) and respiratory (i.e. lungs) systems.	0	VOC[1]	Gasoline and other petroleum substances	High
Toluene	Adversely effects developing children, and suspected of damaging the reproductive, respiratory, nervous and immune (i.e. increase risk of infectious disease and cancer) systems.	1 ppm[3]	VOC[1]	Gasoline and other petroleum substances	High with other chemicals in gas
MTBE	Suspected of causing cancer, damaging the nervous and respiratory systems and harming the ability of the kidneys to clean dangerous impurities in the blood.	13 ppb[4, 5]	Oxygenate	Gasoline	High with other chemicals in gas
Cadmium	Causes cancer and adversely effects developing children and the reproductive system. Suspected of adversely affecting the nervous, endocrine and immune systems.	5 ppb[4]	Heavy Metal	Used motor oil & other waste oils	High in acidic conditions
Xylenes	Suspected of adversely effecting developing children, damaging the reproductive, immune and respiratory systems.	10 ppm[3]	VOC[1]	Gasoline and other petroleum substances	Moderate
Naphthalene	Recognized cause of cancer, suspected of adversely effecting developing children, and of damaging the nervous, cardiovascular and respiratory systems.	1.7 ppb[4,6]	PAH[2]	Gasoline and other petroleum substances	High in sandy soils
1,2 Dichloroethane	Recognized cause of cancer and suspected of causing adverse development and reproductive effects and of harming the cardiovascular, nervous and respiratory systems.	0	VOC[1]	Leaded Gasoline[7]	Very High to High
Ethylbenzene	Recognized cause of cancer and suspected of adversely effecting developing children and reproductive system and of damaging the nervous and respiratory systems.	0.7 ppm[3]	VOC[1]	Gasoline and other petroleum substances	Moderate
Ethylene Dibromide	Known to cause cancer and adverse effects on developing children and reproductive systems.	0	SOC[8]	Leaded Gasoline[7]	High
Polychlorinated Biphenyls (PCBs)	Known to cause cancer and adversely effect developing children. Suspected of harming the endocrine, immune and nervous systems.	0	SOC[8]	Used Oil	Low
Lead	Recognized cause of cancer and adverse effects on developing children. Suspected of harming the nervous, reproductive and endocrine, respiratory and immune systems.	0	Heavy Metal	Used motor oil & other waste oils	Low

Source: Environmental Defense, *Scorecard.org* (2005), Michigan DEQ, *RPD Operational Memo. #2* (2004), ATSDR, *Toxicological Profiles* (various).

1. VOC: Volatile Organic Compound. 2. PAH: Polycyclic Aromatic Hydrocarbon. 3. PPM: Parts Per Million 4. Parts Per Billion
5. California Drinking Water Health Advisory 6. California Drinking Water Notification Level 7. Lead Scavenger, Lead is still used in fuel for planes and off-road vehicles.
8. Synthetic Organic Compound

Contamination Threatens Vulnerable People

Leaking underground storage tanks (USTs) hold gasoline, diesel fuel, waste oil and other toxic materials that contain dangerous chemicals and heavy metals that are known to cause cancer, injure developing children and harm the human reproductive and nervous systems. Living near a leaking UST or drinking water from a well that is polluted by an UST may present a serious threat to vulnerable people, such as children. Small water systems can have fewer monitoring and notification requirements than big systems. Pollution from USTs can seep under homes and schools, without any notice to exposed people. Millions of kids and other individuals in schools, churches and day care centers are potentially at risk.

20 Million People Drink From More Than 100,000 Small Groundwater Systems

About 20 million people drink water from small drinking water systems that get rely on groundwater. Most people get drinking water from community water systems that mostly supply water to large numbers of people. But, millions of people get drinking water from more than 100,000 small water systems that rely on groundwater.

Kids and Other Vulnerable Individuals Drink Water from Small Systems That Use Groundwater

- More than 4 million kids and other individuals at day care centers, schools and camps get their water from small systems.
- More than 1.3 million people in churches get their drinking water from small systems.
- More than 2.4 million people in restaurants get their drinking water from small systems.

Children & Other Individuals Served Drinking by Small Systems That Rely on Groundwater

Facilities Served	# of People Served	Facilities Served	# of People Served
Day Care Centers, Schools & Camps	4,009,839	Restaurants	2,410,487
Campgrounds & RV Parks	658,840	Nursing Homes	13,910
Churches	1,313,052	Medical Facilities	352,684
TOTAL 8,758,812			

Source: EPA, *Regulatory Impact Analysis for the Proposed Ground Water Rule* (2000). Note: Small systems includes both Non-transient non-community water systems and Transient non-community water systems.

USTs and Their Facilities Could Endanger Children and Other Vulnerable People

Leaking USTs have contaminated drinking water supplies for schools and threatened drinking water supplies for the elderly. Preliminary research has found that children who live near gas stations or automobile repair shops were four times more likely to develop childhood leukemia than children who did not live near such stations establishments. Gas stations often have USTs that hold gasoline. Gas contains benzene, which is known to cause leukemia. Gasoline and other dangerous substances can silently leak from USTs, contaminating groundwater and migrating under nearby properties, including yards and playgrounds.

Children, The Elderly, Churches and Others Are Threatened by Contamination

- In Roselawn, IN, MTBE from a leaking UST contaminated a school's drinking water supply and threatened a senior center's drinking water well. (2001)
- In San Diego, CA, a school district tested the air and soil near a facility after six workers had contracted cancer since 1998, and two days later revealed that it had removed three leaking USTs more than eight years ago. (2005)
- In Newton, CT, the UST at a new school released 4,000 gals. of heating oil over Christmas vacation. (2005)
- In Decatur, AL, contamination from an UST was discovered in 1999. Neither the state nor the UST's owner told nearby residents. A five-year old girl named Haley Terry, who lived and played near the site, has contracted leukemia. Though no samples were taken in 1999, soils samples taken from Haley's yard in 2005 show evidence of contamination. (2005)
- More than 150 water systems in 17 states have filed suit against the makers of methyl tertiary butyl ether (MTBE) for contamination, including the Columbia Board of Education, Horace Porter School and Our Lady of the Rosary Chapel in CT; the United Methodist Church in Wellfleet, MA; Christ the King Catholic Church in Queens, NY; and the Buchanan County School Board and Patrick County School Board in VA. (2005)

Three Types of Drinking Water Systems

- **Community Water System**: Water providers that supply drinking water through at least 15 connections (for example pipes) to year-round residents or that regularly serves water to at least 25 year-round residents.
- **Non-transient Non-community Water System (NTNCWS)**: Water provider that regularly serves drinking water to at least 25 of the same persons over 6 months and that is not a community water system.
- **Transient Non-community Water System (TWS)**: Water provider that does not regularly serve at 25 of the same persons six months out of a year and that is not a community water system.

Number of Small Systems That Rely on Groundwater For Drinking Water

State	# of TSW	Pop. Served by TWS	# of NTNCWS	Pop. Served by NTNCWS	State	# of TSW	Pop. Served by TWS	# of NTNCWS	Pop. Served by NTNCWS
AL	123	11,170	46	21,182	MT	1,011	140,745	215	38,504
AK	906	97,647	0	0	NE	584	22,241	189	26,219
AZ	602	120,126	216	100,317	NV	273	55,792	91	28,497
AR	442	22,521	57	13,528	NH	1,012	181,949	421	77,505
CA	3,698	1,301,671	1,018	359,096	NJ	2,955	346,484	1,009	274,758
CO	1,061	153,454	133	34,884	NM	506	74,256	149	38,101
CT	3,360	2,980,181	641	121,664	NY	5,742	853,533	693	248,223
DE	215	57,634	86	24,840	NC	5,373	542,400	655	198,136
FL	3,660	304,865	1,119	286,055	ND	215	16,910	22	2,349
GA	663	127,661	291	80,240	OH	3,545	533,921	1,116	276,441
HI	3	1,125	14	7,437	OK	302	34,172	123	20,419
ID	1,033	125,873	265	68,195	OR	1,390	233,477	332	67,531
IL	3,715	413,000	446	142,655	PA	7,017	922,336	1,251	480,328
IN	2,984	327,229	693	158,102	RI	300	48,875	70	25,246
IA	639	78,653	133	35,715	SC	577	54,837	248	71,239
KS	110	4,481	67	23,602	SD	243	42,949	25	3,072
KY	83	9,374	80	21,620	TN	503	61,504	58	11,010
LA	482	115,804	234	88,070	TX	1,378	245,171	748	253,468
MD	2,509	93,757	495	142,171	UT	439	79,371	52	20,969
MA	863	209,476	229	67,650	VT	718	523,079	1	25
MI	8,930	1,187,331	1,718	344,654	VA	1,911	443,920	772	312,422
MN	6,963	252,602	672	49,514	WA	1,498	283,735	287	70,009
MS	169	28,006	126	89,416	WV	644	47,313	182	39,318
MO	1,040	138,894	227	76,360	WI	9,704	731,781	1,049	214,561
TOTAL	**92,093**	**14,683,286**	**18,764**	**5,155,317**					

	Systems	Population Served
Total # of Small Systems and Population Served	110,857	19,838,603

Source: EPA, National Primary Drinking Water Regulations: Ground Water Rule, Proposed Rule 65 Fed. Reg.30194 (2000).

Contamination Endangers Communities Across the Country

- One gallon of petroleum can contaminate one million gallons of groundwater.
- One pin-prick sized hole in an underground storage tank can leak 400 gallons of fuel a year.
- Gasoline-related compounds were detected in 10% of drinking water sources sampled across the nation.
- More than 1,800 municipal water supplies are *known to be* contaminated with MTBE.
- Twenty-seven states reported plumes of MTBE contamination thousands of feet in length.
- Oil companies knew of MTBE's potential to contaminate groundwater as early as 1981.

State	Description of Contamination
AZ	Wilcox has a four feet thick layer of fuel floating on top of its groundwater aquifer that has polluted drinking water wells. (2004)
CA	Santa Monica lost half of its drinking water supply wells in 1995 from MTBE contamination. (2001)
CA	South Lake Tahoe shut down 1/3 of its drinking water wells due to MTBE contamination in 1997. (2000)
CA	The Western San Bernardino County Water District has a four-foot thick layer of diesel, gasoline, jet fuel and other petroleum products floating on top of its groundwater aquifer used for drinking water. (2001)
CO	Eighty percent of Denver's shallow drinking water wells are contaminated with detectable levels of MTBE. (1998)
FL	Leaking USTs have caused church day care workers complained of petroleum fumes, oily films on dishes and a potential underground explosion. (1998)
IA	Sioux City, Ida Grove and Galva detected MTBE and benzene in their drinking water supplies. Galva and Ida Grove had to switch their source of water and Sioux City is relying on un-contaminated wells. (2003)
IN	In the city of Roselawn, MTBE contaminated a school's drinking water supply and threatened a senior center's drinking water well. (2004) The water supplies for 25 communities in Illinois are contaminated with MTBE. (2001)
MA	Eighty six communities in Massachusetts had detectible levels of MTBE in their drinking water supplies. (2004)
MD	More than 600 drinking water wells in Maryland are polluted with MTBE, including 84 contaminated properties in Fallston. (2005)
ME	Six-teen percent of Maine's drinking water supplies had detectable levels of MTBE and more than 5,000 residential wells could have MTBE levels that exceed state drinking water standards. (1998) One area of contamination in the village of Tenants Harbor contaminated 105 drinking water wells. (2004)
MO	USTs have contaminated 50 drinking water sources, including six public drinking water systems. (2003)
NC	Gasoline contaminated drinking water for over 150 people in Wrightsboro. (1998)
NE	Eight communities serving about 10,000 people detected MTBE in their drinking water. (2003)
NH	MTBE has polluted at least 15% of New Hampshire's drinking water supplies, including 40,000 private wells. (2004)
NJ	MTBE contaminated 65 public drinking water supplies. (1998) In Ringwood, gasoline compounds contaminated residential drinking wells and forced the construction of new drinking water supply lines to effected homes. (2004)
NY	MTBE contaminated more than 200 residential drinking water supplies in rural New York. (1998)
OR	Free-floating gasoline was found in a monitoring well on school property and within 500 feet of a wildlife refuge. Officials conducting the cleanup had to block gasoline vapors from entering homes. (2000)
PA	MTBE contaminated 13 wells along the Quakertown-Richland border. (2001)

Highest Concentration of MTBE in Groundwater (ppb)

State	Level	State	Level	State	Level	State	Level	State	Level
AK	10,300	**IA**	99,400	**MT**	19,8000	**OH**	265,000	**VA**	1,240,000
AR	> 10,000	**ID**	50,000	**NC**	> 10,000	**OR**	250,000	**VT**	536,000
AZ	68,000	**KS**	500,000	**NE**	38,610	**RI**	2,200,000	**WA**	7,150
CA	2,000,000	**LA**	25,000	**NH**	180,000/170,000	**SC**	2,500,000	**WV**	5,000
CO	170,000	**ME**	1,000,000	**NJ**	> 10,000	**SD**	200	**WI**	4,000
CT	100,000	**MD**	500,000	**NM**	450,000	**TN**	200	**WY**	4,300
DE	300,000	**MI**	344,000	**NV**	220,000	**TX**	9,131,994		
GA	300	**MN**	73,000	**NY**	4,400,000	**UT**	101,000		

Source: New England Interstate Water Pollution Control Commission, *The Complied Results of the Survey of State Experiences with MtBE and other Oxygenate Contamination at LUST Sites* (March-April 2003).

The Tip of a Toxic Iceberg: Reported Contamination at USTs

The 130,000 *known* leaking USTs are likely just the tip of a toxic iceberg. Officials do not discover most leaks until USTs are taken out of service. Moreover, officials have not checked for leaks at 76,000 closed USTs or at an estimated 190,000 unregistered USTs that pose a threat of contamination. EPA also fails to ensure that states adequately inspect tanks, train staff or enforce protections. Tanks that meet federal safeguards can leak; including vapors that can spread contaminate.

Nationally, there are 3.8 million non-federally regulated USTs buried across our nation. These USTs are not subject to federal inspection, maintenance or cleanup rules, though some states protections may apply. States with inadequate resources must try to address both federally-regulated and non-federally-regulated leaks. Federal and state officials acknowledge that they frequently lack the necessary resources and legal authorities for inspecting USTs and cleaning up and preventing contamination.

Undercutting Protections

Inadequate Inspections

- Officials have failed to ensure that 30% of all federally-regulated USTs, totaling more than 200,000 tanks, are properly operated and maintained.
- EPA and state officials have failed to inspect all 76,000 closed tanks that do not meet current federal requirements, despite officials having found inactive tanks still pose a risk of contamination.
- Only physical inspections can confirm that USTs meet federal protections. However, 22 states do not inspect all of their USTs. Thus, they do not know if their USTs meet federal protections; they may never inspect some tanks. Only 19 states physically inspect all of their USTs once every three years. Ten states inspect USTs less than once every five years.
- States that fail to physically inspect all tanks allow owners to *certify* that their USTs meet existing protections or they inspect only a small number of tanks.
- Officials in 40 states support a federal mandate that required states to periodically inspect all USTs.
- Industry representatives support periodic, and annual if possible, inspections and of USTs.

Insufficient Training & Staffing

- Frequent problems undercut the effectiveness of leak prevention equipment in 19 states.
- Leak detection equipment is frequently turned off or improperly maintained in 15 states.
- Frequent problems hamper the operation of equipment that prevents spills and overfilling in seven states.
- Official in 47 states say their staff needs extra training.
- Forty-one states say that their programs need more federal technical assistance.

Neglecting Enforcement

Ineffective Enforcement

State officials share the responsibility of enforcing protections at UST facilities with the federal EPA. However, many state officials lack the resources to adequately enforce such protections.

- Government officials acknowledge that leak detection and overfill protection devices are turned off, rendered inoperable or improperly maintained.
- Official in 27 states say they need additional enforcement authorities
- Officials in 46 states say that they need *additional enforcement resources*.
- Officials must ensure that polluters pay for cleanups. However, states often pay for cleanups using fees collected from taxpayer who buy gas, even though an owner may have the ability to pay for a cleanup.

Failing to Use Federal Surplus Funds

Increase Federal Financial Resources

The federal government has $2.4 billion in surplus funds collected from taxpayers. However, the current administration has proposed to use only 3% of these funds to help pay for cleaning up contamination at UST sites.

- The Government Accountability Office recommended *increased use the federal UST surplus* to "promote better inspections and enforcement and to address related resource shortfalls."
- EPA is failing to meet its goal of cutting the number of needed cleanups in half by 2007, which requires cleanups to average between 18,000-23,000 per year. However, the current administration failed to request additional resources to meet its cleanup goal.

Protect Communities and Drinking Water

The federal government should undertake five essential actions to protect communities and their drinking water supplies from UST contamination. Without such action, the current slowdown in cleanups could grow more severe, resulting in an increased number of contaminated sites and reversing decades of progress since Congress created federal UST protections in 1984.

The federal government should increase funding, pollution prevention measures, efforts to make polluters pay to clean up their contamination, enforcement of minimum federal safeguards and the public's right to know when polluters contaminate the environment. Delaying such protections will increase threats to communities, drinking water supplies and cleanup costs

Increase Funding to Protect Communities

The federal government should increase funding for prevention, cleanups and enforcement of protections:

Preventing Contamination: Training and Inspections

The federal government should increase funding for trainings on leak prevention and the proper operation and maintenance of USTs. Officials should inspect all closed and unregistered USTs that could cause contamination.

- Initial training for and two-year inspection of each UST facility in the nation: $63 M
- Inspecting all UST facilities every two years: $20 M
- Searching for and inspecting unregistered USTs over a two-year period: $20 M*

Cleaning Up Contamination

The federal government should increase clean up funds when states are unable to adequately fund such activities.

- The average UST cleanup costs $125,000.
- Using 10 percent of the surplus funds would pay for an additional 2,000 cleanups.

Enforcing Protections for Public Health

The federal government should increase funds for administrative, civil and criminal enforcement against entities that violate protections at UST facilities.

Prevent Contamination

The federal government should require secondary containment and leak monitoring on all USTs:

- EPA and state officials acknowledge that secondary containment is one of the most effective means to prevent contamination from leaks. Congress required ships that carry oil in US waters to have double hulls to protect the environment. Tanks that store dangerous substances above our groundwater and near our homes should have similar protections.
- Leak monitoring equipment is essential to alert officials about leaks before they can spread.

* Additional resources may be needed to locate and inspect estimated 76,000 abandoned and unregistered USTs that might be found during the initial survey.

Use Effective Enforcement Tools

The current administration should *stand by its commitment to make polluters pay* to clean up contamination and work to ensure that all government programs have effective enforcement tools, including the power to:

- Prohibit fuel deliveries to owners and operators of tanks that fail to comply with existing protections;
- Fine violators of existing protections;
- Issue immediate citations to the owners or operators of tanks for violations;
- Seek civil sanctions in court against the owners or operators of tanks that violate protections;
- Seek criminal charges against owners or operators of tanks that violate protections; and
- Make polluters pay the full cost of cleaning up contamination from a leaking UST.

Ensure Minimum Federal Safeguards

The federal government has largely delegated the UST program to the states. However, it has failed to monitor state programs to ensure they meet minimum federal safeguards. The current administration should assess whether UST programs meet federal safeguards, including:

- Financing: States must have a stable funding source and owners/operators must have ample cleanup funds,
- Enforcement: Ensure that polluters who have the ability to pay for cleanups in fact fund such activities,
- Pollution Prevention: Regularly inspect USTs and ensure that all USTs meet strong prevention standards,
- Cleanup Activities: The immediate clean up of concentrated contamination ("free product") and expeditious clean up of all backlogged sites.

Public Right to Know About Pollution

The administration should ensure the public has the right to know about the location, content and ownership of USTs and the extent of contamination from an UST.

Charts Fact Sheets and Bibliographies

The subsequent sections contain the following information:

1. **National Charts**
   Chart One: Backlog of Cleanups at Leaking UST Sites
   Chart Two: Percentage of Population that Relies on Groundwater for Drinking Water
   Chart Three: Percentage of Leaking UST Sites Cleaned Up
   Chart Four: Top States with Lowest Percentage of Sites Cleaned Up
   Chart Five: State UST Funding, By Rank
   Chart Six: State UST Funding, By State
   Chart Seven: State Considers Leaking USTs a Threat to Groundwater Quality

2. **Major Karst Aquifers in the United States**: Karst aquifers provide 40 percent of the nation's drinking water that is derived from groundwater. However, this types of aquifers can also be extremely vulnerable to contamination.

3. **State Underground Storage Tank Fact Sheets:** A description of state UST programs, use of groundwater and contamination of groundwater by related-UST pollutants.

4. **Bibliographies**
   National Report
   State Fact Sheets

Chart 1

States Backlog of Cleanups at Leaking Underground Storage Tanks

Rank	State	Cleanup Backlog	% of Pop. Relying on Ground Water as a Drinking Water	Rank	State	Cleanup Backlog	% of Pop. Relying on Ground Water as a Drinking Water
1	FL	17,544	93	29	WY	1,132	59
2	CA	15,049	46	30	MT	1,085	53
3	MI	9,039	46	31	LA	1,015	61
4	IL	8,591	33	32	CO	998	22
5	NC	6,927	50	33	NM	913	90
6	TX	4,577	45	34	VA	910	34
7	PA	4,456	41	35	AK	885	64
8	NJ	3,825	53	36	CT	857	54
9	WI	3,641	70	37	NH	837	62
10	SC	3,515	45	38	VT	797	65
11	OH	3,463	46	39	PR	597	28
12	IN	3,449	64	40	OK	502	34
13	MD	3,280	31	41	UT	498	57
14	GA	2,924	41	42	HI	366	97
15	AZ	2,597	60	43	AR	332	53
16	KY	2,522	25	44	MS	301	92
17	NY	2,297	35	45	DE	297	66
18	NE	2,262	87	46	NV	275	31
19	KS	2,082	50	47	RI	260	27
20	IA	2,039	78	48	SD	247	70
21	WA	2,002	61	49	DC	243	0
22	AL	1,657	52	50	ID	168	96
23	OR	1,526	44	51	ME	134	60
24	MO	1,456	54	52	ND	43	57
25	MA	1,294	46				
26	TN	1,221	47				
27	WV	1,214	43				
28	MN	1,199	80				
TOTAL		**129,340**					

Sources: EPA, *FY 2004 Semi-Annual End-ofYear Activity Report* 2-3 (2004).

EPA, *Safe Drinking Water Act, Section 1429 Ground Water Report to Congress* 4 (1999) (excludes USTs on Native American lands).

Chart 2

Percent of the Population that Relies on Groundwater for Drinking Water, By State

State	% of Pop. Drinking Groundwater	Population	Pop. Drinking Groundwater	Pop. Drinking Surface Water
AK	64%	655,435	416,856.66	238,578.34
AL	52%	4,530,182	2,351,164.46	2,179,017.54
AR	53%	2,752,629	1,461,646.00	1,290,983.00
AZ	60%	5,743,834	3,457,788.07	2,286,045.93
CA	46%	35,893,799	16,331,678.55	19,562,120.46
CO	22%	4,601,403	1,016,910.06	3,584,492.94
CT	54%	3,503,604	1,895,449.76	1,608,154.24
DC	0%	553,523	0.00	553,523.00
DE	66%	830,364	548,870.60	281,493.40
FL	93%	17,397,161	16,144,565.41	1,252,595.59
GA	41%	8,829,383	3,655,364.56	5,174,018.44
HI	97%	1,262,840	1,218,640.60	44,199.40
IA	78%	2,954,451	2,304,471.78	649,979.22
ID	96%	1,393,262	1,340,318.04	52,943.96
IL	33%	12,713,634	4,220,926.49	8,492,707.51
IN	64%	6,237,569	3,967,093.88	2,270,475.12
KS	50%	2,735,502	1,378,693.01	1,356,808.99
KY	25%	4,145,922	1,040,626.42	3,105,295.58
LA	61%	4,515,770	2,750,103.93	1,765,666.07
MA	46%	6,416,505	2,932,342.79	3,484,162.22
MD	31%	5,558,058	1,711,881.86	3,846,176.14
ME	60%	1,317,253	795,620.81	521,632.19
MI	46%	10,112,620	4,651,805.20	5,460,814.80
MN	80%	5,100,958	4,070,564.48	1,030,393.52
MO	54%	5,754,618	3,095,984.48	2,658,633.52
MS	92%	2,902,966	2,673,631.69	229,334.31
MT	53%	926,865	494,945.91	431,919.09
NC	50%	8,541,221	4,253,528.06	4,287,692.94
ND	57%	634,366	360,954.25	273,411.75
NE	87%	1,747,214	1,521,823.39	225,390.61
NH	62%	1,299,500	801,791.50	497,708.50
NJ	53%	8,698,879	4,627,803.63	4,071,075.37
NM	90%	1,903,289	1,711,056.81	192,232.19
NV	31%	2,334,771	719,109.47	1,615,661.53
NY	35%	19,227,088	6,652,572.45	12,574,515.55
OH	46%	11,459,011	5,305,522.09	6,153,488.91
OK	34%	3,523,553	1,194,484.47	2,329,068.53
OR	44%	3,594,586	1,567,239	2,027,347
PA	41%	12,406,292	5,111,392	7,294,900
PR	28%	3,894,855	1,082,770	2,812,085
RI	27%	1,080,632	286,367	794,265
SC	45%	4,198,068	1,884,932.53	2,313,135.47
SD	70%	770,883	538,076.33	232,806.67
TN	47%	5,900,962	2,773,452.14	3,127,509.86
TX	45%	22,490,022	10,210,469.99	12,279,552.01

Sources: EPA, *Safe Drinking Water Act, Section 1429 Ground Water Report to Congress* 4 (1999) and US Census Bureau, *Annual Estimates of the Population for the United States and States, and for Puerto Rico: April 1, 2000 to July 1, 2004* (NST-EST2004-01) (2004).

Chart 2

Percent of the Population that Relies on Drinking Water, By State

State	% of Pop. Drinking Groundwater	Population	Pop. Drinking Groundwater	Pop. Drinking Surface Water
UT	57%	2,389,039	1,361,752.23	1,027,286.77
VA	34%	7,459,827	2,543,801.01	4,916,025.99
VT	65%	621,394	403,906.10	217,487.90
WA	61%	6,203,788	3,771,903	2,431,885
WI	70%	5,509,026	3,845,300	1,663,726
WV	43%	1,815,354	786,048.28	1,029,305.72
WY	59%	506,529	296,319.47	210,209.54

Sources: EPA, *Safe Drinking Water Act, Section 1429 Ground Water Report to Congress* 4 (1999) and US Census Bureau, *Annual Estimates of the Population for the United States and States, and for Puerto Rico: April 1, 2000 to July 1, 2004* (NST-EST2004-01) (2004).

Chart 3

Percent of UST Sites Cleaned Up

National Average for Cleanups: 71 percent of all sites cleaned up

Rank	State	Percent of Sites Cleaned Up	Percent of Sites Cleaned Up	Confirmed Releases	Number of Cleanups
1	FL	-40%	31%	25,359	7,815
2	WY	-28%	43%	1,979	847
3	KS	-17%	54%	4,560	2,478
4	MI	-15%	56%	20,511	11,472
5	IN	-14%	57%	8,032	4,583
5	WV	-14%	57%	2,828	1,614
7	VT	-13%	58%	1,904	1,107
8	SC	-12%	59%	8,541	5,026
8	NJ	-12%	59%	9,383	5,558
10	AK	-10%	61%	2,280	1,395
10	IL	-10%	61%	22,218	13,627
10	NH	-10%	61%	2,166	1,329
10	LA	-10%	61%	2,633	1,618
14	NE	-9%	62%	5,922	3,660
14	MT	-9%	62%	2,854	1,769
14	NM	-9%	62%	2,433	1,520
17	CT	-7%	64%	2,408	1,551
17	IA	-7%	64%	5,741	3,702
19	CA	-6%	65%	42,825	27,776
20	WA	-4%	67%	6,026	4,024
20	PA	-4%	67%	13,609	9,153
22	AZ	-3%	68%	8,137	5,540
23	DC	-2%	69%	788	545
24	NC	-1%	70%	23,233	16,306
25	GA	2%	73%	10,636	7,712
25	MD	2%	73%	12,216	8,936
25	AR	2%	73%	1,243	911
28	MO	5%	76%	6,075	4,619
29	OR	7%	78%	6,794	5,268
29	MA	7%	78%	6,009	4,715
31	RI	8%	79%	1,218	958
32	HI	9%	80%	1,803	1,437
32	WI	9%	80%	18,136	14,495
32	KY	9%	80%	12,865	10,343
35	TX	10%	81%	23,771	19,194
36	CO	13%	84%	6,368	5,370
37	AL	14%	85%	10,763	9,106
37	OH	14%	85%	23,367	19,904
39	DE	16%	87%	2,220	1,923
39	MN	16%	87%	9,390	8,191
39	OK	16%	87%	3,946	3,444
39	ID	16%	87%	1,321	1,153
43	UT	17%	88%	4,058	3,560
43	NY	17%	88%	19,621	17,324
45	NV	18%	89%	2,400	2,125
45	SD	18%	89%	2,323	2,076

Source: EPA, *FY 2004 Semi-Annual End-of-Year Activity Report* (2004).

Chart 3

Percent of UST Sites Cleaned Up

National Average for Cleanups: 71 percent of all sites cleaned up

Rank	State	Percent of Sites Cleaned Up	Percent of Sites Cleaned Up	Confirmed Releases	Number of Cleanups
47	TN	19%	90%	12,512	11,291
48	VA	20%	91%	10,181	9,271
49	ME	23%	94%	2,129	1,995
50	ND	24%	95%	811	768
50	MS	24%	95%	6,456	6,155
	Total		71%	446,178	316,780

Source: EPA, *FY 2004 Semi-Annual End-of-Year Activity Report* (2004).

Chart 4

Top States with Lowest Percent of Sites Cleaned Up

Rank	State	State % vs. Nat'l Average	% Cleaned Up	Confirmed Releases	Total Cleanups	Rank	State	State % vs. Nat'l Average	% Cleaned Up	Confirmed Releases	Total Cleanups
1	FL	-40%	31%	25359	7815	14	NE	-9%	62%	5922	3660
2	WY	-28%	43%	1979	847	14	MT	-9%	62%	2854	1769
3	KS	-17%	54%	4560	2478	14	NM	-9%	62%	2433	1520
4	MI	-15%	56%	20511	11472	17	CT	-7%	64%	2408	1551
5	IN	-14%	57%	8032	4583	17	IA	-7%	64%	5741	3702
5	WV	-14%	57%	2828	1614	19	CA	-6%	65%	42825	27776
7	VT	-13%	58%	1904	1107	20	WA	-4%	67%	6026	4024
8	SC	-12%	59%	8541	5026	20	PA	-4%	67%	13609	9153
8	NJ	-12%	59%	9383	5558	22	AZ	-3%	68%	8137	5540
10	AK	-10%	61%	2280	1395	23	DC	-2%	69%	788	545
10	IL	-10%	61%	22218	13627	24	NC	-1%	70%	23233	16306
10	NH	-10%	61%	2166	1329						
10	LA	-10%	61%	2633	1618						

Source: EPA, *FY Semi-Annual End-of-year Activity Report* (2004).

Chart 5

State Underground Storage Tank Program Funding, By Rank

Rank	State	Funding Deficit (millions)	Total Approx. Current Balance ('03-04) (millions)	Outstanding Claims ('03-'04) (millions)	Rank	State	Funding Deficit (millions)	Total Approx. Current Balance ('03-04) (millions)	Outstanding Claims ('03-'04) (millions)
1	MI	-$1,700.00	$0	$170.00	25	MS	$5.65	$5.90	$0.25
2	CA	-$1,029.00	$171.00	$1,200	26	ME	$5.98	$5.98	$0.00
3	WI	-$151.80	$13.2[G]	$4.43	27	MD	$6.17	$6.17	$0.00
4	CT	-$53.00	$5.00	$58	28	NH	$6.23	$9.14	$2.91
5	TN	-$95.60	$8	$20	29	ND	$6.67	$7.68	1.01[I]
6	NC	-$27.52	0.68[J]	$28.20	30	MN	$7.60	$19.60	$12.00
		-$4.15	1.3[K]	$5.45	31	AR	$9.38	$15.15	$5.77
7	MA	-$20.00	NA[A]	$20	32	OK	$10.14	$10.70	$0.56
8	CO	-$14.30	$1.53	$15.83	33	LA	$13.03	$15.09	$2.06
9	PA	-$10.00	$204	$214	34	IL	$14.20	$22.00	$7.80
10	VA	-$7.59	$1.01	$9	35	NM	$16.37	$19.77	3.4[D]
11	OH	-$5.12	$29.91	$35.03	36	NE	$22.00	$24.40	$2.40
12	AL	-$4.60	$0.90	$5.50	37	WA	$25.30	29.3[E]	$4
13	WV	-$1.10	$0.20	$1.30			-$0.46	0.31[F]	$0.77
14	VT	-$0.49	$4.89	$5.38	38	IN	$23.50	$31.00	$7.50
15	AK	$0	$0	NA	39	ID	$39.00	$39	$0
16	WY	$0.00	$98.41	NA	40	MO	$47.27	$48	$1.13
17	DE	$0.15	$0.50	$0.35	41	GA	$54.20	$68.40	$14
18	RI	$0.50	$1.50	$1.00	42	NJ	$70.00	$80.00	$10.00
19	MT	$0.51	$1.21	$0.70	43	IA	$100.00	$100	0
20	KS	$2.70	$2.70	$0	44	TX	$131.40	$181	$49.50
21	NV	$3.00	$5	$2.00	45	FL	$272.00	$273	$1
22	SC	$3.29	$29.67	$26.38	46	AZ	NA	$25.00	NA
23	KY	$4.30	$22	$18.10	47	NY	NA	$20.00	NA
24	SD	$5.15	$5.30	$0.15	48	UT	NA	$8.70	NA
	TOTAL	**-$2,069.35**	**$1,630**	**$1,966.67**					

Chart 5

State Underground Storage Tank Program Funding

Sources: ASTSWMO, 2004 State Financial Assurance Funds Survey Results (2004), except for Michigan, Tennessee, South Carolina, Vermont and Wisconsin figures, which are provided by: Michigan Department of Environmental Quality, Site Funding Needs Environmental Remediation and Redevelopment (Jan. 2003) (on file with author) (outstanding claims based on estimated public funding needed to cleanup known sites); South Carolina Department of Health and Environmental Control, Underground Storage Tank Quarterly Financial Report July 1, 2004 - December 31, 2004 Second Quarter; Petroleum Cleanup Fund Advisory Committee, Sixteenth Annual Report on the Status of (Vermont's) Petroleum Cleanup Fund (2004) (outstanding claims based on estimated public funding needed to cleanup known sites) and Wisconsin's deficit figure is from ASTSWMO's 2003 survey (deficit figure is based on estimated public funding needed to cleanup known sites.

NOTE: Deficit figures differ from figures provided by ASTSWMO due to inclusion of internally produced reports that describe large deficits based on the number of expected future cleanups that will need public funding.

A MA's fund was repealed in FY04 so all revenue goes to the General Fund.
B The funds for MD and NY are not an assurance or a financial responsibility fund, tank owners need private insurance or be self-insured.
C Workplan liability and reserve (through March 2004).
D Received and unpaid February 2003, (approved but unpaid to 3/31/04).
E Commercial Underground Storage Tank Program
F Oil Heat Program
G Additional funds by bonding was approved by our legislature for $94 million for the FY '04 &'05. We have drawn $45 of the $94 million so far. Of the $45 million, we have a balance of $18,978,616.74 left.
H Effective 1/1/96 USTs that meet the new or upgraded tank requirements must have private insurance or be self-insured. Effective 12/22/01 all coverage for ASTs and USTs is $190,000.
I Reserves J Commercial K Non-commercial

Chart 6

State Underground Storage Tank Program Funding, by State

State	Funding Deficit (millions)	Total Approx. Current Balance ('03-04) (millions)	Outstanding Claims ('03-'04) (millions)	State	Funding Deficit (millions)	Total Approx. Current Balance ('03-04) (millions)	Outstanding Claims ('03-'04) (millions)
AK	$0	$0	NA	NC	-$27.52	0.68[J]	$28.20
AL	-$4.60	$0.90	$5.50		-$4.15	1.3[K]	$5.45
AR	$9.38	$15.15	$5.77	ND	$6.67	$7.68	1.01[I]
AZ	NA	$25.00	NA	NE	$22.00	$24.40	$2.40
CA	-$1,029.00	$171.00	$1,200	NH	$6.23	$9.14	$2.91
CO	-$14.30	$1.53	$15.83	NJ	$70.00	$80.00	$10.00
CT	-$53.00	$5.00	$58	NM	$16.37	$19.77	3.4[D]
DE	$0.15	$0.50	$0.35	NV	$3.00	$5	$2.00
FL	$272.00	$273	$1	NY	NA	$20.00	NA
GA	$54.20	$68.40	$14	OH	-$5.12	$29.91	$35.03
IA	$100.00	$100	0	OK	$10.14	$10.70	$0.56
ID	$39.00	$39	$0	PA	-$10.00	$204	$214
IL	$14.20	$22.00	$7.80	RI	$0.50	$1.50	$1.00
IN	$23.50	$31.00	$7.50	SC	$3.29	$29.67	$26.38
KS	$2.70	$2.70	$0	SD	$5.15	$5.30	$0.15
KY	$4.30	$22	$18.10	TN	-$95.60	$8	$20
LA	$13.03	$15.09	$2.06	TX	$131.40	$181	$49.50
MA	-$20.00	NA[A]	$20	UT	NA	$8.70	NA
MD	$6.17	$6.17	$0.00	VA	-$7.59	$1.01	$9
ME	$5.98	$5.98	$0.00	VT	-$0.49	$4.89	$5.38
MI	-$1,700.00	$0	$170.00	WA	$25.30	29.3[E]	$4
MN	$7.60	$19.60	$12.00		-$0.46	0.31[F]	$0.77
MO	$47.27	$48	$1.13	WI	-$151.80	$13.2[G]	$4.43
MS	$5.65	$5.90	$0.25	WV	-$1.10	$0.20	$1.30
MT	$0.51	$1.21	$0.70	WY	$0.00	$98.41	NA
	-$2,069.35	**$1,630**	**$1,966.67**				

Chart 6

State Underground Storage Tank Program Funding, by State

Sources: ASTSWMO, 2004 State Financial Assurance Funds Survey Results (2004), except for Michigan, Tennessee, South Carolina, Vermont and Wisconsin figures, which are provided by: Michigan Department of Environmental Quality, Site Funding Needs Environmental Remediation and Redevelopment (Jan. 2003) (on file with author) (outstanding claims based on estimated public funding needed to cleanup known sites); South Carolina Department of Health and Environmental Control, Underground Storage Tank Quarterly Financial Report July 1, 2004 - December 31, 2004 Second Quarter; Petroleum Cleanup Fund Adviosry Committee, Sixteenth Annual Report on the Status of (Vermont's) Petroleum Cleanup Fund (2004) (outstanding claims based on estimated public funding needed to cleanup known sites) and Wisconsin's deficit figure is from ASTSWMO's 2003 survey (deficit figure is based on estimated public funding needed to cleanup known sites.

NOTE: Deficit figures differ from figures provided by ASTSWMO due to inclusion of internally produced reports that describe large deficits based on the number of expected future cleanups that will need public funding.

A MA's fund was repealed in FY04 so all revenue goes to the General Fund.
B the funds for MD and NYs are not an assurance or a financial responsibility fund, tank owners need private insurance or be self-insured.
C Workplan liability and reserve (through March 2004).
D Received and unpaid February 2003, (approved but unpaid to 3/31/04).
E Commercial Underground Storage Tank Program
F Oil Heat Program
G Additional funds by bonding was approved by our legislature for $94 million for the FY '04 &'05. We have drawn $45 of the $94 million so far. Of the $45 million, we have a balance of $18,978,616.74 left.
H Effective 1/1/96 USTs that meet the new or upgraded tank requirements must have private insurance or be self-insured. Effective 12/22/01 all coverage for ASTs and USTs is $190,000.
I Reserves J Commercial K Non-commercial

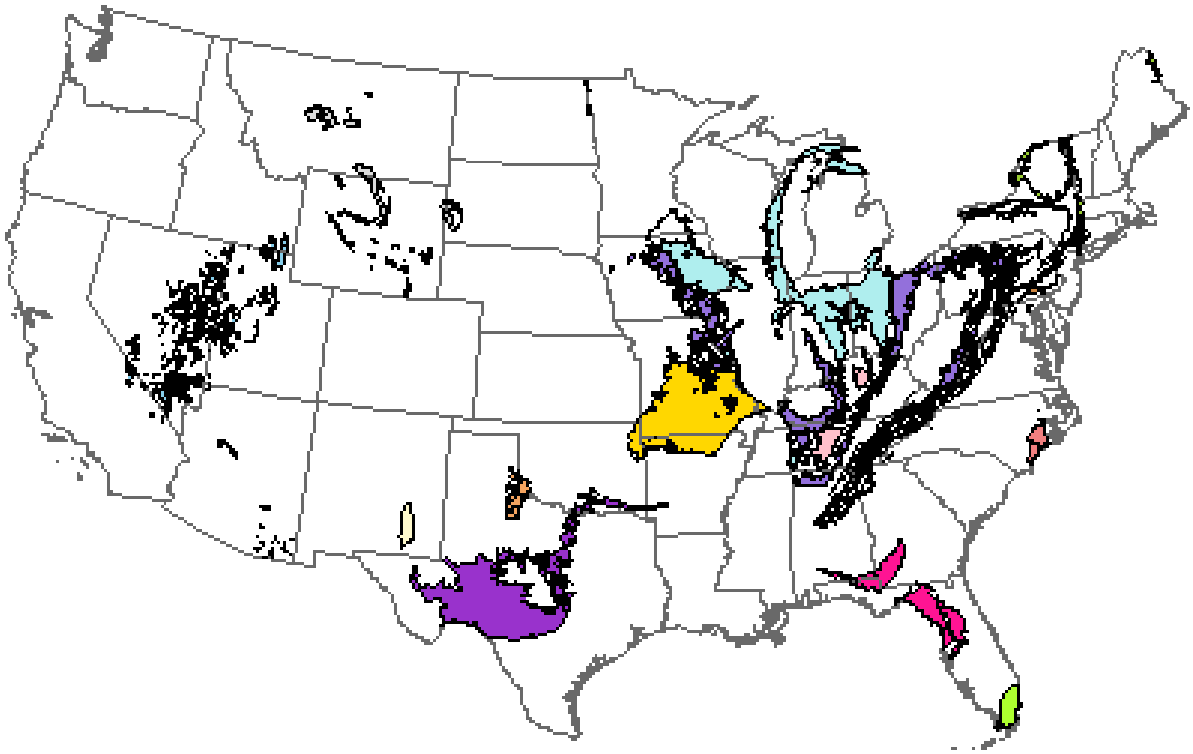
Chart 7 **Leaking USTs Are A Threat To Groundwater Quality (GW) in 45 States**

State	Threat to GW	State	Threat to GW
AK	Y	MS	Y
AL	Y	MT	Y
AR	Y	NC	Y
AS		ND	
AZ		NE	Y
CA	Y	NH	Y
CNMI		NJ	
CO	Y	NM	Y
CT	Y	NV	Y
DC	Y	NY	Y
DE	Y	OH	Y
FL	Y	OK	Y
GA	Y	OR	Y
GU	Y	PA	Y
HI	Y	PR	
IA	Y	RI	Y
ID		SC	Y
IL	Y	SD	Y
IN	Y	TN	
KS	Y	TX	Y
KY	Y	UT	
LA	Y	VA	Y
MA		VI	
MD	Y	VT	Y
ME	Y	WA	Y
MI	Y	WI	Y
MN	Y	WV	Y
MO	Y	WY	Y

Sources: EPA, *National Water Quality Inventory Report* (2000) and State reports on file with the author.

Major Karst Aquifers in the United States

Karst regions contain aquifers that can provide plentiful supplies of groundwater. However, many karst aquifers are also vulnerable to contamination because contamination can move rapidly through the ground and throughout the aquifer. Karst regions comprise 20 percent of our nation's land surface area and provide 40 percent of the nation's groundwater that is used for drinking water.



Legend

- Arbuckle–Simpson Aquifer
- Basin and Range Carbonate–Rock Aquifers
- Biscayne Aquifer
- Blaine Aquifer
- Castle Hayne Aquifer
- Edwards–Trinity Aquifer System
- Floridan Aquifer System
- Mississippian Aquifers
- New York and New England Carbonate–Rock Aquifers
- Ordovician Aquifers
- Ozark Plateaus Aquifer System
- Paleozoic Aquifers
- Piedmont and Blue Ridge Carbonate–Rock Aquifers
- Roswell Basin Aquifer System
- Siburian–Devonian Aquifers
- Upper Carbonate Aquifer
- Valley and Ridge Aquifers
- Valley and Ridge Carbonate–Rock Aquifers

Source: U.S. Geological Survey, *Karst* (Available at http://water.usgs.gov/ogw/karst/) (Last checked on April 8, 2005).

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