Welcome

The Leaking Underground Storage Tank (LUST) Program continues to emphasize the importance of streamlining the underground storage tank remediation process. The signing of a significant piece of

Contents

Accomplishments

- More LUST incidents were closed than reported.
- The amount of funds reimbursed to owners or operators continues to increase.
- A total of 1393 acres of land has been cleaned up in the past year, with 17,368.75 acres remediated since 1989.

Highlights

- Public Act 92-0554 was signed into law on June 24, 2002 (see page 5).
- USTfields Grants awarded (see page 10).

Environmental Land Use Control	ELUC
Geographic Information System	GIS

UST/LUST Program

Through a cooperative agreement with the U.S. EPA, the Illinois EPA and the Illinois OSFM administer a comprehensive UST Program at the state level. The Illinois EPA administers the remedial investigation, corrective action, and reimbursement portions of the state program, while the Illinois OSFM administers the preventative and permitting side of the program. Communication between the two agencies is crucial for effective implementation of the state program.

In 1984, Subtitle I of the federal Resource Conservation and Recovery Act established a regulatory program for USTs. In 1986, amendments to Subtitle I established a federally funded UST Program to address petroleum releases from USTs. The Illinois General Assembly enacted a law in 1987 that established a state UST Program to meet the objectives of the federal UST Program.

The regulatory authority for the LUST Program comes from 35 Ill. Adm. Code 731: Underground Storage Tanks, 732: Petroleum Underground Storage Tanks, 742: Tiered Approach to Corrective Action Objectives, and Public Act 92-0554 (see page 5).

Abandoned gas stations are often located on high-visibility intersections.

Owner or Operator Requirements

Release Date	Regulations	Site Classification	Site Investigation	TACO
Prior to September 13, 1993	35 Ill. Adm. Code 731	No	Yes*	Yes
September 13, 1993-June 23, 2002	35 Ill. Adm. Code 732	Yes	Yes*	Yes
On or after June 24, 2002	Public Act 92-0554 (Regulations pending)	No	Yes	Yes

*May perform Site Investigation pursuant to Public Act 92-0554 by submitting an elect-to-proceed form provided and prescribed by the Illinois EPA.

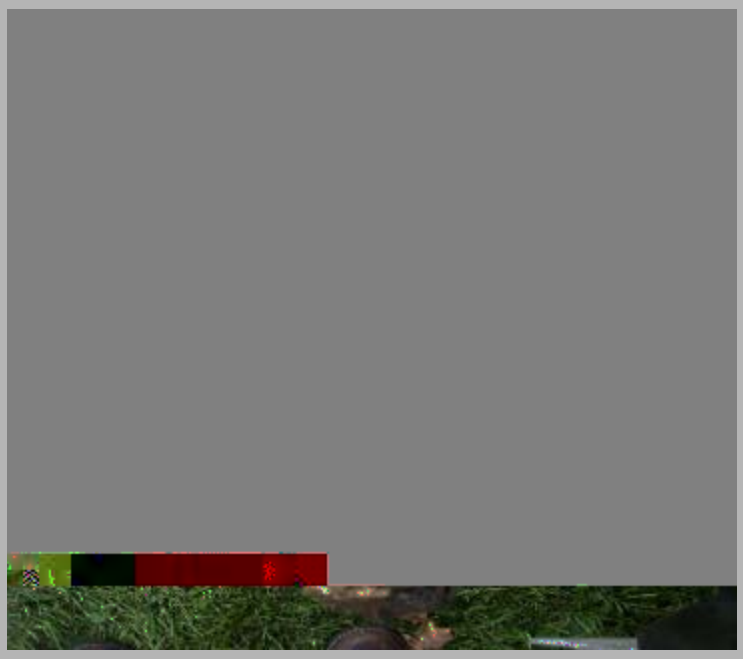
TACO

The primary goal of remediation is to manage contamination to prevent harm to human health and the environment. The TACO regulations in 35 Ill. Adm. Code 742 provide more flexibility to site owners or operators in the development of remediation objectives by allowing the use of a risk-based, site-specific approach. These remediation objectives protect human health while taking into account site conditions and land use scenarios. Site owners or operators decide how to best manage their sites within TACO guidelines, subject to the Illinois EPA review and approval. By exercising these choices, site owners or operators may reduce remediation costs, return more sites to productive use, and hasten property redevelopment, while still remaining in full compliance with environmental laws and regulations.

The Illinois EPA will propose amendments to the TACO regulations in 2003, which will include updates to the remediation objectives and clarifications to certain sections of the regulations.

For more information about TACO, visit the Illinois EPA's TACO Web page at:

http://www.epa.state.il.us/land/taco/index.html



A soil core is used to identify geologic characteristics by relying on visual observations and the collection of samples.

Regulated Substances

The LUST Section oversees and reviews remediation activities at sites for which releases of regulated substances from an UST system were reported to the IEMA. Regulated substances include petroleum and hazardous substances. Petroleum substances include gasoline (leaded and unleaded), diesel fuel, fuel oil, jet fuel and used (waste) oil, which comprise 96 percent of the total incidents reported. Hazardous substances include virgin (raw) chemicals such as benzene, methyl ethyl ketone, xylene and many others, which comprise three percent of the incidents reported. The remaining one percent of incidents reported is a combination of petroleum and hazardous substances.

Treatment Techniques

The LUST Section approves both conventional and alternative techniques for the treatment of soil and groundwater. Conventional techniques (e.g., excavation of soil, pumping and treatment of groundwater) have proven to be effective in removing the risk from petroleum leaks. However, recent innovations in remediation technologies have produced methods of remediation that are not only more efficient, but also more cost-effective and less intrusive than conventional techniques.

Conventional methods of soil and groundwater remediation will continue to serve their purpose in the LUST Program; however, the following techniques are being used with more frequency than in the past.

Bioremediation

Bioremediation allows natural processes to reduce contaminant levels for a petroleum leak or spill. Microbes that live in soil and groundwater can "eat" contaminants, completely digesting them until they change them into harmless water and gases. While microbes are present in soil and groundwater, they often have to be enhanced to perform efficient remediation of the contaminants. This enhancement can be in the form of adding oxygen to promote proliferation of the microbes, or injecting microbes into the soil if the native population is not dense enough to promote remediation.

Bioremediation can be performed either in the ground (*in-situ*) or aboveground (*ex-situ*). *In-situ* remediation consists of injecting an oxygen-releasing compound into the subsurface, injecting "contaminant-eating" microbes into the subsurface, or a combination of the two. *Ex-situ* remediation consists of removing contaminated groundwater from the subsurface, adding oxygen-releasing compounds and "contaminant-eating" microbes, then reinjecting

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NFR Letter Restrictions

Of the 796 NFR letters issued in 2002, 383 included one or more of the restrictions listed below. The decision to impose restrictions or remove the remaining contamination is made by tank owners and operators.

Type of restrictions include:

Engineered Barrier: Engineered barriers block the exposure pathway and may include asphalt or concrete pavement, permanent structures (e.g. building) or other material approved by the Illinois EPA. An engineered barrier must be properly maintained to prevent exposure to any remaining contamination.

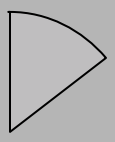
Environmental Land Use Control: An ELUC is a document that is recorded on the chain of title of an off-site property that imposes some type of restriction.

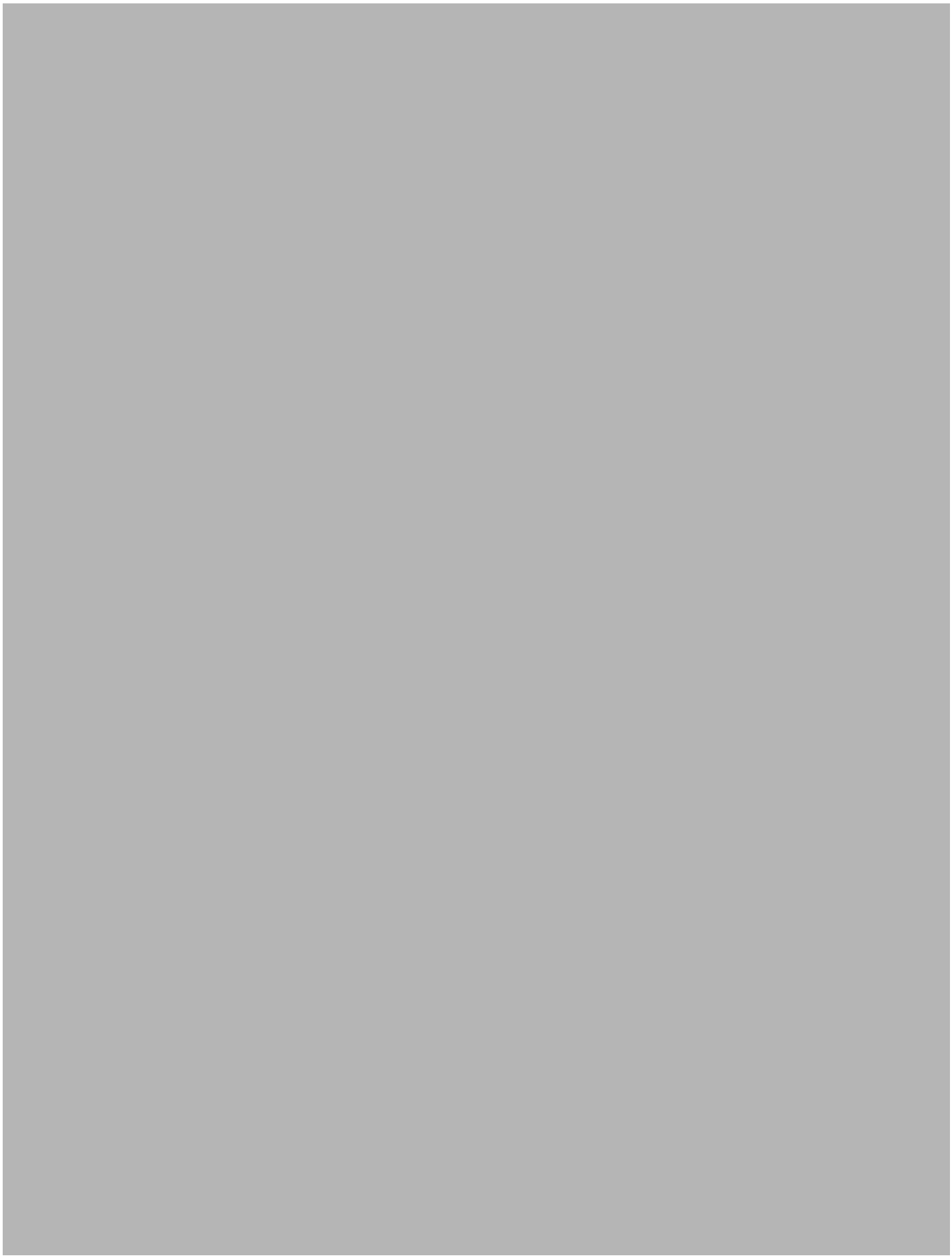
Groundwater Use Ordinance: A groundwater use ordinance, adopted by local government, prohibits the installation and use of potable water supply wells, either within the entire community or a portion of the community.

Groundwater Use Restriction: A groundwater use restriction prohibits the installation and use of potable water supply wells, usually at the site. Restrictions may also include ELUCs for other properties that may have been impacted by the site release and would, therefore, prohibit groundwater use off-site in place of a local ordinance.

Highway Authority Agreement: A highway authority agreement is between the tank owner or operator and the highway authority that prohibits the use of groundwater and limits access to soil contamination under a highway right-of-way.

Industrial/Commercial Restriction: An industrial/commercial land use restriction prohibits residential use of the site.





USTfields Pilot Project

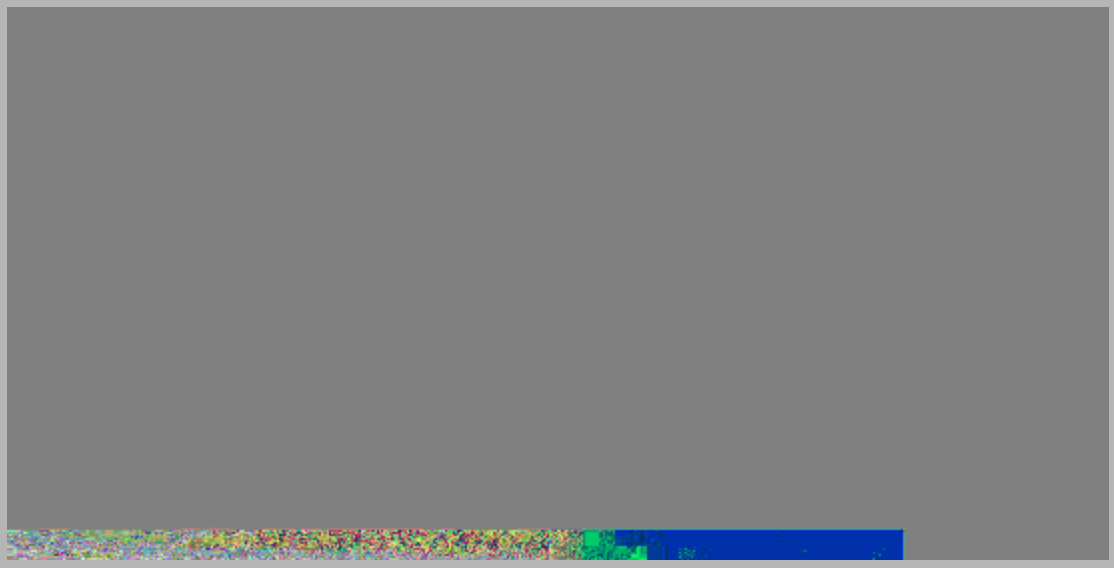
On July 1, 2002, the U.S. EPA announced that 26 states had been awarded $3.8 million in grants to address petroleum contamination at abandoned gas stations throughout the nation. Out of the 76 proposals that were submitted, Illinois EPA was awarded two grants. $100,000 was awarded for Freeport and $84,700 was awarded for Waukegan. Illinois was one of only 10 states awarded multiple grants.

The USTfields pilot projects, funded under the U.S. EPA Office of Underground Storage Tanks, are expected to demonstrate how to better use limited resources to assess and clean up petroleum-impacted brownfields sites. The state, in cooperation with the municipality, provides the services for the pilot, administers the grant, oversees the project and hires a contractor to perform the remediation work. The ultimate goal is economic and community revitalization while protecting human health and the environment.

In Freeport, two old abandoned gas/service stations are located at an intersection in a highly visible portion of the city. Once the contamination has been addressed, the sites will be made part of the Grand Illinois Trail, slated to run through Freeport. Illinois EPA staff has initiated site investigation activities, with a preliminary soil and groundwater investigation to determine the extent of contamination. A method of remediation will be determined depending on the nature and extent of the contamination.

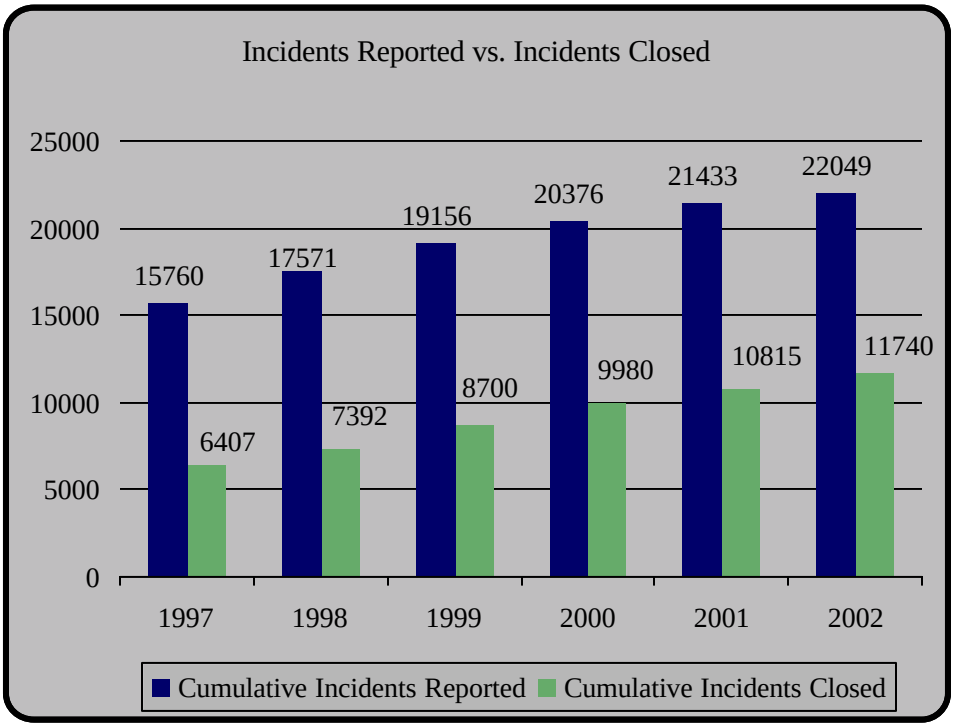
In Waukegan, a former gas station is located in a corner of a large parking lot owned by the city. Once remediated, this portion of the block will be incorporated into an overall plan for redevelopment. Site investigation activities will be scheduled in early 2003.

It is anticipated that by late 2003 or early 2004 both sites will be issued NFR Letters.



The redevelopment of abandoned gas stations is a way to restore contaminated land in communities across Illinois.

Statistics

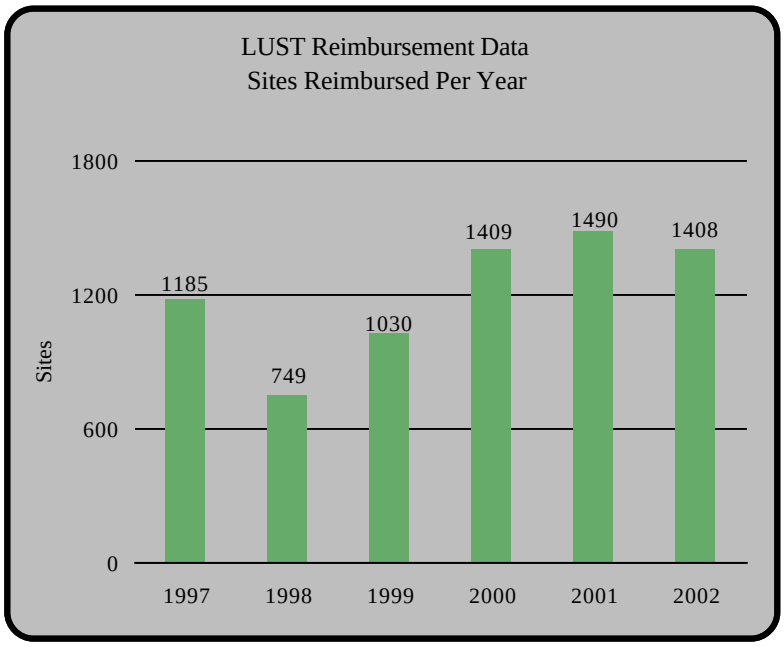


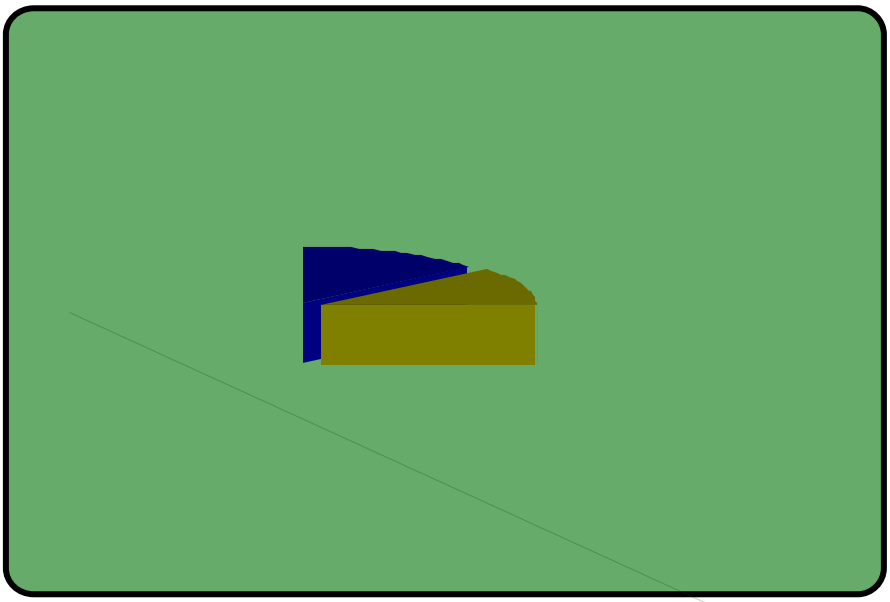
Web Page Update

The LUST Program's Web page was redesigned to keep it consistent with state standards. The database was also given a "face-lift" and is more user friendly. New features include the ability to search the database by county and a better d1.7g 4baseTT28 14.25 0 Tcb 26 0.:20.012 50..1731 7437 8700

UST Fund (cont'd)

The graph shows the number of sites reimbursed has remained relatively steady over the past three years.



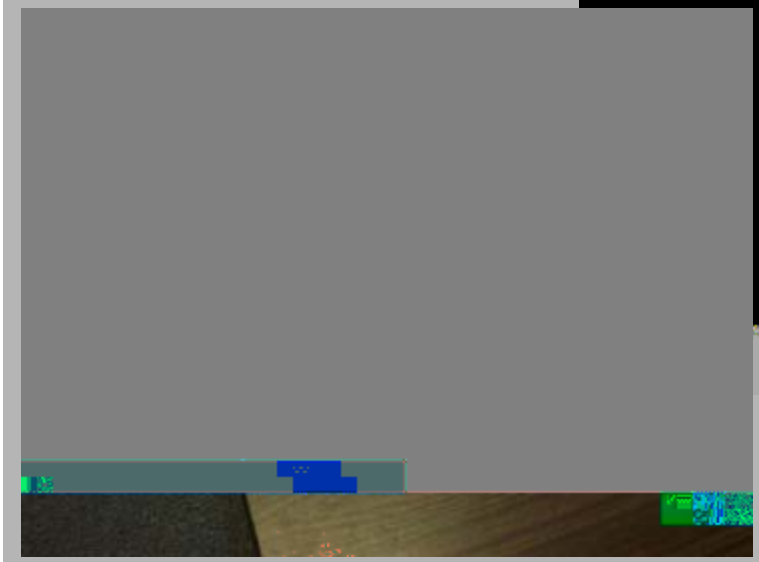


The amounts shown in the graph entitled Incident Costs for 2002 represent the total amount of reimbursement paid for specific categories of claims throughout the year. Early action costs include activities such as tank removal, sampling and further release prevention. Site classification costs include Methods One and Two and Pathway Exclusion. Low Priority costs are for a three-year groundwater monitoring period. High Priority costs range from physical remediation at a site to the use of institutional controls. "Old program" sites are not subject to Title XVI and the Part 732 regulations since they were reported prior to September 16, 1993, so claims submitted for these incidents are combined.

GIS

In an effort to advance the Illinois EPA's GIS initiative, all LUST incidents currently in the database have been assigned latitude and longitude coordinates. This will enable LUST site information to be integrated into the Illinois EPA's GIS database.

GIS is a rapidly growing technological field that incorporates graphical features, such as topographical maps, with tabular data, such as the location of LUST sites, in order to assess real-world problems. While such information will not be immediately available to the general public, environmental consultants may access this information when conducting a water well supply survey. The map depicts the location of LUST sites throughout the state.



The above data logger is used as the interface device for a GIS backpack unit.

Questions

For questions regarding:

UST system installation, upgrade or removal
Leak prevention or detection
Aboveground storage tanks
Complaints about suspected UST system releases
Financial responsibility requirements
UST Fund eligibility and deductible

Office of State Fire Marshal
Division of Petroleum and Chemical Safety
1035 Stevenson Drive