PERFORMANCE AUDIT
OF THE

# STORAGE TANK DIVISION

DEPARTMENT OF ENVIRONMENTAL QUALITY

October 2002

76-135-98

Michigan

*Office of the Auditor General*

# REPORT SUMMARY

*Performance Audit*

*Storage Tank Division*

*Department of Environmental Quality*

**Report Number:**
**76-135-98**

**Released:**
**November 2002**

*The Storage Tank Division, Department of Environmental Quality (DEQ), is responsible for the protection of public health, the environment, and natural resources of the State from releases and fire safety hazards associated with underground and aboveground storage tanks through education, innovation, pollution prevention, remediation, and compliance activities.*

***Audit Objectives:***

1. To assess the effectiveness of underground storage tank (UST) regulation.

2. To assess the effectiveness of the Division's efforts to ensure the remediation of contaminated sites.

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***Audit Conclusions:***

1. The Division's regulatory efforts had limited effectiveness.

2. The Division's efforts to ensure the remediation of contaminated sites had limited effectiveness.

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***Reportable Conditions:***

1. Effectiveness of Regulatory Efforts

The Division should strengthen its enforcement efforts to help ensure that UST owners and operators comply with UST rules and regulations designed to prevent or minimize environmental contamination. Our most recent inspection visits indicated that a significant percentage of the facilities visited were not in compliance with required controls. Also, the Division did not compute the rate at which UST owners and operators corrected compliance violations on the same basis as it computed the rate at which violations were detected through inspections. In addition, the Division made limited use of the enforcement methods provided by State statutes to compel UST owner and operator compliance with rules and regulations. (Finding 1)

DEQ partially agrees with the corresponding recommendation.

2. Financial Responsibility

The Division should improve its effectiveness in enforcing UST owner and operator compliance with the requirement to provide financial responsibility for potential UST release remediation costs.

Thirty-five (34%) of 104 UST owners and operators selected for a test of compliance with financial responsibility requirements did not respond to our request to provide documentation of compliance. We consider the 34% of unknown compliance to be of concern because it could indicate that the UST owners and operators did not have documentation of compliance and therefore did not respond. (Finding 2)

DEQ partially agrees with the corresponding recommendation.

3. Program Evaluation

The Division needs to improve its process used to evaluate and improve the effectiveness of its UST Regulatory Program. The Division had not established the necessary evaluation elements to enable it to measure the effectiveness of its UST Regulatory Program in helping the Division achieve its mission. (Finding 3)

DEQ partially agrees with the corresponding recommendation.

4. UST Release Remediation

The Division should increase its efforts to help ensure that owners and operators responsible for UST releases perform required environmental contamination remediation activities. The Division's database did not accurately indicate the UST release risk classification and corrective action classification. Also, the Division made limited use of statutorily provided methods to compel owners and operators responsible for UST releases to comply with their plan for remediating the environmental contamination. In addition, the Division made limited use of the financial penalties provided by statute to compel owners and operators responsible for UST releases to comply with the Division's remediation reporting requirements. Further, the Division did not ensure that owners or operators responsible for UST releases submitted the risk classifications of the releases, as required by statute. (Finding 4)

DEQ partially agrees with the corresponding recommendation.

5. Cost Recovery

There was limited recovery of State funds spent on the remediation of contaminated sites. As of June 30, 2001, the Division had expended approximately $12.6 million of State funds on the remediation of contaminated sites of which it had recovered approximately $136,000. Also, the Division had outstanding liens of approximately $428,000 on sites for which it had not yet recovered the State funds expended. (Finding 5)

DEQ partially agrees with corresponding recommendations.

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A copy of the full report can be obtained by calling 517.334.8050 or by visiting our Web site at: www.state.mi.us/audgen/

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THOMAS H. MCTAVISH, C.P.A.
AUDITOR GENERAL

November 15, 2002

Mr. Russell J. Harding, Director
Department of Environmental Quality
Constitution Hall
Lansing, Michigan

Dear Mr. Harding:

This is our report on the performance audit of the Storage Tank Division, Department of Environmental Quality.

This report contains our report summary; description of agency; audit objectives, scope, and methodology and agency responses and prior audit follow-up; background of the Underground Storage Tank Regulatory Program; comments, findings, recommendations, and agency preliminary responses; an exhibit showing active underground storage tank facilities with and without financial responsibility, presented as supplemental information; and a glossary of acronyms and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Thomas H. McTavish, C.P.A.
Auditor General

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## DEPARTMENT OF ENVIRONMENTAL QUALITY


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## Description of Agency

### Division History and Activities

The Storage Tank Division, Department of Environmental Quality (DEQ), is responsible for the protection of public health, the environment, and natural resources of the State from releases* and fire safety hazards associated with underground storage tanks* (USTs) and aboveground storage tanks* (ASTs) through education, innovation, pollution prevention, remediation*, and compliance activities. It performs activities associated with law and rule requirements for certain USTs and ASTs. These activities include pollution prevention, cleanup of contaminated sites, emergency cleanup funding, oversight of cleanups performed by owners* and operators*, and prevention of fire safety hazards. These requirements are contained in Sections 324.21101 - 324.21551 of the *Michigan Compiled Laws* (Act 451, P.A. 1994, as amended, the Natural Resources and Environmental Protection Act [NREPA]):

Part 211: Underground Storage Tank Regulations
Part 213: Leaking Underground Storage Tanks
Part 215: Underground Storage Tank Financial Assurance

Additional requirements are contained in Sections 29.1 - 29.34 of the *Michigan Compiled Laws* (Act 207, P.A. 1941, as amended, the Fire Prevention Code), and *Michigan Administrative Code* R 29.2101 - 29.2174 (the Michigan Underground Storage Tank Rules, effective January 2, 1999). The Michigan Underground Storage Tank Rules provide technical standards for UST systems, including corrosion protection, release detection*, spill and overfill protection, and compliance and reporting schedules for each type of requirement. These rules also provide financial responsibility* requirements applicable to owners and operators, including governmental entities, of UST systems.

Executive Order 1994-7, effective May 3, 1994, created the Underground Storage Tank Division within the Environmental Protection Bureau of the Department of Natural Resources (DNR) and provided for the transfer of the UST regulatory responsibilities to DNR from the Michigan Department of State Police, effective October 1994, and the

** See glossary at end of report for definition.*

UST financial responsibility functions from the Department of Management and Budget, effective May 3, 1994.

Executive Order 1995-18 created DEQ and transferred the UST functions and responsibilities from DNR to DEQ, effective October 1, 1995.

Executive Order 1997-2 transferred the AST regulatory authority and responsibility functions from the Michigan Department of State Police to DEQ, effective September 30, 1997.

Executive Order 1998-2 changed the name of the Underground Storage Tank Division to the Storage Tank Division, effective May 15, 1998.

Services and products provided by the Division are developed and delivered through a collaborative relationship with the regulated community, other State and federal agencies, and the general public in a timely, cost-effective, and consistent manner.

**Federal Program**

Subtitle I of the Resource Conservation and Recovery Act of 1976 (Title 42 of the *United States Code*, Section 6991 et seq), effective November 8, 1984, requires the U.S. Environmental Protection Agency* (EPA) to develop a comprehensive regulatory program to prevent, detect, and correct releases from certain USTs storing regulated substances*. The law also encourages states to develop and substitute, with EPA approval, their own UST regulatory programs, providing such programs contain requirements that are no less stringent than the federal requirements and there is adequate enforcement of compliance. EPA approval of a state program means that the requirements in the state's laws and regulations will be in effect rather than the federal requirements. Program approval ensures that a single set of requirements (the state's) will be enforced in the state, thus eliminating the duplication and confusion that could result from having separate state and federal requirements. Once the EPA approves the state program, the UST regulatory program will operate under an agreement with the EPA that clearly delineates the EPA's limited role in an approved state and assures the state of its lead role in administering and enforcing the UST program law.

* *See glossary at end of report for definition.*

A state may implement its own UST regulatory program using state law if it has received either formal program approval from or an operating agreement with the EPA. Michigan has enacted laws and rules establishing the UST Regulatory Program under an operating agreement with the EPA. Michigan has not sought formal EPA approval for the Program because DEQ considers the operating agreement approach most advantageous.

**State Programs**

UST Regulatory Program

Michigan's UST Regulatory Program became effective on March 29, 1985. As of September 2000, the Division's regulatory activities were designed to help prevent releases of regulated substances (petroleum and hazardous substances*) into the environment from approximately 23,200 active USTs* at approximately 8,100 UST facilities. Program staff oversee the design, construction, installation, and operation of certain USTs. Program staff review tank* installation plans, innovative technologies, tank testing methodologies, new products, and technical standards; review tank lining methods for USTs; and perform tank inspections. The Program collects and maintains registration forms and fees for USTs, tank closure* notices, release reports, and tank closure site assessment reports.

Leaking Underground Storage Tank Program

The Leaking Underground Storage Tank (LUST) Program, established by Act 478, P.A. 1988, provides for the review and approval of all phases of LUST site* investigation and corrective action* remedy selection. In October 1993, State statutes were amended to require qualified UST consultants (QCs) to conduct all of the corrective action activities at LUST sites with DNR (the administering agency at the time) providing an auditing or oversight role to ensure compliance with the law. Individuals responsible for LUST sites must hire a QC and submit specific reports relative to a UST release. These reports include an initial assessment report; a final assessment report with an associated corrective action plan, if appropriate; and a closure report. Currently, the Division selectively audits field activities and reports submitted by QCs to ensure compliance with the law. In 1995, Part 213 of NREPA was amended to incorporate the ASTM International (formerly the American Society for Testing and Materials) risk-based corrective action* standards for the evaluation and closure of LUST sites.

** See glossary at end of report for definition.*

In 1996, Part 213 of NREPA was amended wherein prospective owners and operators of properties could obtain an exemption from liability for existing LUST contamination by conducting a baseline environmental assessment* (BEA). If a BEA investigation by a prospective owner or operator identified LUST contamination at a site that was previously unknown to the Division, the facility was added to the Division's database for further follow-up with liable parties, if practical.

Michigan Underground Storage Tank Financial Assurance Program

Act 518, P.A. 1988, created the Michigan Underground Storage Tank Financial Assurance (MUSTFA) Program, which became effective July 18, 1989. The MUSTFA Program is funded by an environmental protection regulatory fee of 7/8 of a cent per gallon on all refined petroleum products. The MUSTFA Program provided financial responsibility of up to $1 million per claim for owners and operators of UST systems to help pay for the costs of cleaning up environmental contamination* resulting from releases from UST systems. As required by Part 215 of NREPA, the State Treasurer notified the MUSTFA Program administrator on March 31, 1995 that expected revenues from the MUSTFA Program were insufficient to cover expected expenditures. Therefore, as required by Part 215, the MUSTFA Program stopped accepting claims, invoices, and requests for third-party indemnification as of June 29, 1995 and, accordingly, ended its ability to provide financial responsibility for cleaning up environmental contamination. The Division continues to process appeals and administer remaining aspects of the MUSTFA Program, including the financing portion of the MUSTFA Fund.

In addition, under the MUSTFA Program, the Division continues to review applications for QCs and certified UST professionals. The Division maintains a list of QCs that the Division has approved to conduct work in the LUST Program.

AST Program

Act 207, P.A. 1941, established the AST Program, which was transferred to DEQ effective September 30, 1997. The Program regulates the design, construction, installation, and operation of certain ASTs storing flammable and combustible liquids, liquefied petroleum gas, and compressed natural gas for the purposes of fire safety and preventing the release of regulated substances into the environment. The Division reviews tank installation plans and performs tank inspections of all new tanks required

** See glossary at end of report for definition.*

to be certified. The Division performs triennial inspections of all existing tanks required to be certified and collects annual certification fees. Regulatory response activities related to environmental impacts from ASTs are the responsibility of DEQ's Environmental Response Division. Because of the limited amount of time that the Division had been responsible for the AST Program at the beginning of our audit, we did not include a review of this Program in our audit scope.

**Organizational Structure and Functions**

The Division consists of the Operations Section, Support Section, Enforcement Unit, and Administration Unit:

1. Operations Section - The Operations Section consists of the State Funded Cleanup Unit, eight district offices, and three field offices located throughout the State. The Section is responsible for conducting inspections, monitoring compliance at both UST and AST facilities, and ensuring the appropriate cleanup of LUST sites. In addition, the Section is responsible for the programmatic and financial aspects of State-funded programs designed to finance corrective action at LUST sites. State-funded financing programs include the MUSTFA Fund, the Cleanup and Redevelopment Sub-Fund (CRF), and the Clean Michigan Initiative Bond Fund (CMI). The Division's district and field offices located throughout the State have responsibility for assisting owners and operators in complying with the requirements of NREPA, the Fire Prevention Code, and rules promulgated thereunder. As of September 30, 2000, the Division was responsible for monitoring and controlling environmental impacts from approximately 23,200 active USTs at approximately 8,100 UST facilities, 7,400 active ASTs at approximately 3,100 AST facilities, and approximately 9,000 UST releases at approximately 7,100 LUST sites. Activities include inspecting UST and AST installations and taking initial steps to resolve noncompliance at facilities. If initial attempts at resolution fail, a facility could be recommended for escalated enforcement actions. When the activities are of a criminal nature, the district office makes referrals to, and coordinates with, DEQ's Office of Criminal Investigations. All other escalated enforcement activity is coordinated with the Division's Enforcement Unit.

   In addition, the Operations Section district office staff are responsible for reviewing BEAs, performing site investigations, auditing LUST reports, inspecting UST removals, and responding to complaints of reported releases and abandoned USTs.

2. Support Section - The Support Section consists of the Information Management Unit and the Technical Review Unit. The Section provides data management services, including maintaining UST, AST, liquid petroleum gas, and compressed natural gas facilities' registration data, tracking confirmed UST releases*, and maintaining the Division's Web site. The Section also provides engineering oversight to help ensure that proposed storage tank system installations are designed in accordance with statutes and rules. Also, the Section is responsible for reviewing UST owner and operator compliance with financial responsibility requirements.

3. Enforcement Unit - The Enforcement Unit is responsible for overseeing and coordinating all administrative and civil enforcement actions for the Division, including assisting district office staff in identifying persons* who are liable; escalating enforcement actions by referring cases to the Department of Attorney General; assisting the Department of Attorney General in conducting court actions; initiating cost recovery actions; and preparing legal documents and negotiating settlements.

4. Administration Unit - The Administration Unit performs the accounting and administrative functions for the Division. Also, the Unit is responsible for the collection and tracking of registration fees associated with regulated USTs and ASTs.

**Division Expenditures and Employees**

For the fiscal year ended September 30, 2000, the Division expended approximately $8.6 million of operating appropriations and approximately $5.8 million of appropriations for site remediation. As of September 30, 2000, the Division had 109 full-time equated employees.

** See glossary at end of report for definition.*

## Audit Objectives, Scope, and Methodology and Agency Responses and Prior Audit Follow-Up

Audit Objectives

Our performance audit* of the Storage Tank Division, Department of Environmental Quality (DEQ), had the following objectives:

1. To assess the effectiveness* of underground storage tank regulation.

2. To assess the effectiveness of the Division's efforts to ensure the remediation of contaminated sites.

Audit Scope

Our audit scope was to examine the program and other records of the Storage Tank Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

Our initial audit work was performed between January and November 1998 and included an examination of Division and selected district office and regulated site records primarily from the period September 1995 through November 1998. At our May 27, 1999 meeting to discuss the preliminary findings, the Division objected to our use of certain statutory requirements as criteria for the period of the audit. The Division stated that it believed that its strategy of not enforcing those requirements throughout the period ended December 22, 1998 was in the best interest of the State. The Division stated that following December 22, 1998 (the U.S. Environmental Protection Agency's underground storage tank upgrade deadline), it intended to significantly revise its programmatic enforcement approach. We agreed to update our initial findings and conclusions with a review of information reflecting the Division's enforcement initiative that began in January 1999. Our follow-up audit work was performed between September 2000 and May 2001 and included an examination of Division and selected district office and regulated site records from the period January 1999 through

* *See glossary at end of report for definition.*

December 2000. Thus, our follow-up addressed approximately two years of activities following the January 1999 enforcement initiative.

Our methodology included a preliminary survey of Division operations. This included interviewing various program staff and reviewing applicable statutes, rules, policies and procedures, reports, and other reference materials.

We studied applicable federal and State statutes, administrative rules, management plans, Division policies and procedures, and other Division reports and manuals. We obtained and reviewed audit reports on similar programs in other states. We interviewed program staff at the Division's central office and at three of the Division's district offices.

We reviewed methods used by the Division to measure and evaluate its effectiveness. We used data obtained from the Division's Information Management Unit as an indicator of the level of compliance with rules and regulations, populations of regulated parties, Division activity, and trends. In addition, we surveyed individuals and companies regulated by the Division, associations representing individuals and companies regulated by the Division, and contractors qualified by the Division to perform remediation activities to obtain information regarding the Division's effectiveness in administering its programs.

We evaluated the Division's methods used to monitor the regulated parties and measure the effectiveness of both the Division's and the regulated parties' efforts.

We assessed the Division's policies and procedures designed to result in the remediation of contaminated sites and examined a sample of Leaking Underground Storage Tank Program site files. We reviewed documentation supporting district office efforts and observed district office operating practices. We compiled data from district office records to assess remediation efforts.

Agency Responses and Prior Audit Follow-Up

Our audit report contains 5 findings and 7 corresponding recommendations. DEQ's preliminary response indicated that it partially agrees with all 7 recommendations.

The agency preliminary response that follows each recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Factual representations made by the agency in the responses have not been

verified by the Office of the Auditor General. Section 18.1462 of the *Michigan Compiled Laws* and Department of Management and Budget Administrative Guide procedure 1280.02 require DEQ to develop a formal response to our audit findings and recommendations within 60 days after release of the audit report.

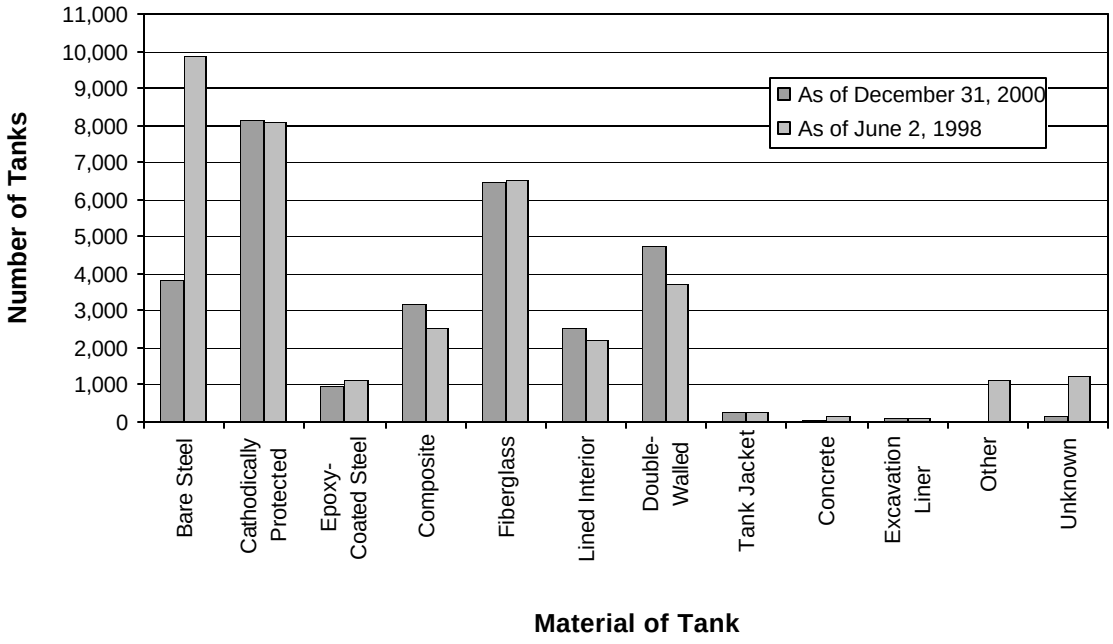
The Division complied with 1 of the 4 prior audit recommendations included within the scope of our current audit. The other 3 recommendations were no longer applicable to the Division's operations. Our prior audit was a follow-up review of the Michigan Underground Storage Tank Financial Assurance Program within the Department of Natural Resources.

## Background of the Underground Storage Tank Regulatory Program

### History

Underground storage tanks (USTs) have become a topic of great environmental concern for both business and government in recent years. USTs are buried to reduce the potential for fire and explosion and to minimize human exposure to hazardous substances. However, prior to December 22, 1988, about 80% of USTs were made of unprotected bare steel, which can corrode and leak. The American Petroleum Institute has estimated that approximately 50% of the bare steel USTs will develop a leak within 15 years after being installed. The type and age of USTs in Michigan as of December 31, 2000 and June 2, 1998 are presented in the following charts:

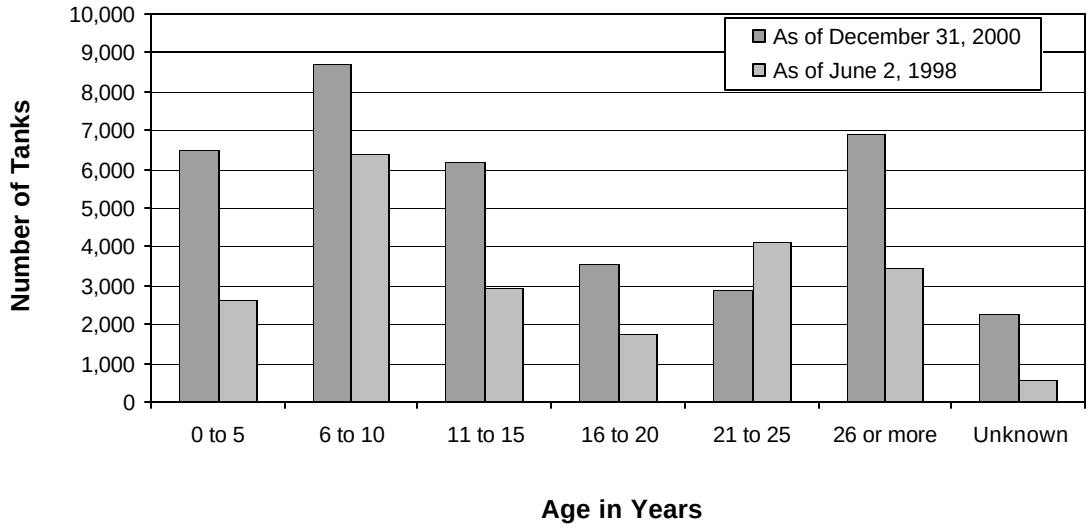
STORAGE TANK DIVISION
Active UST Population by Tank Type*
As of December 31, 2000 and June 2, 1998




Source: Storage Tank Division's database as of December 31, 2000 and June 2, 1998

* Total UST population was approximately 22,000 and 29,000 as of December 31, 2000 and June 2, 1998, respectively. Some USTs are included in multiple tank types.

STORAGE TANK DIVISION
Active USTs by Age
As of December 31, 2000 and June 2, 1998




Source: Storage Tank Division's database as of December 31, 2000 and June 2, 1998

The greatest potential hazard from a leaking underground storage tank (LUST) is the contamination of groundwater*, which is the source of drinking water for about half of Michigan's residents. As of November 1997, U.S. Environmental Protection Agency (EPA) figures indicated that about 60% of UST releases had impacted groundwater. Petroleum fuels (the most prevalent contaminant) usually contain harmful chemicals, such as benzene, a known human carcinogen*. One gallon of gasoline is sufficient to contaminate 1 million gallons of groundwater to an unsafe level. Leaking USTs can also present other health and environmental risks, including the potential for fire and explosion.

**New Requirements**

EPA regulations, effective December 22, 1988 established new standards for certain UST owners and operators. These regulations were designed to (1) prevent environmental contamination, (2) find environmental contamination, (3) correct problems created by environmental contamination, (4) ensure that UST owners and operators could pay for correcting problems caused by environmental contamination, and (5) ensure that each state had an adequate UST regulatory program. Generally,

* *See glossary at end of report for definition.*

these regulations were applicable immediately for UST facilities installed after December 22, 1988, although UST facilities installed prior to December 22, 1988 were granted a "phase-in" period for compliance. By December 22, 1998, all regulated UST facilities were required to meet EPA standards.

**Michigan's UST Regulatory Program**

Michigan initially established its UST Regulatory Program in the Fire Marshal Division of the Michigan Department of State Police. Thereafter, regulatory responsibilities were shifted to the Department of Natural Resources and finally transferred to the Department of Environmental Quality upon its creation in 1995.

The Program has been significantly revised over its life. For example, in 1995, statutory amendments revised the standard for acceptable contamination remediation to a cancer level of risk of 1 in 100,000 from 1 in 1 million and adopted a risk-based corrective action process required to be used to determine the amount of remediation that must be conducted at each LUST site. Also, effective March 6, 1996, statutory amendments shifted the determination of responsibility for environmental contamination to a causation basis from a basis of strict liability*. These amendments were adopted to allow LUST sites to be put back into productive use more efficiently, while still providing a specified level of protection to human health and the environment.

Prior to the December 22, 1998 deadline, the Division had conducted compliance inspections of new UST installations and facilities with older USTs that were not in compliance with the new EPA standards. In addition, the Division had emphasized informing regulated UST owners and operators of the impending EPA deadline and their responsibilities for compliance.

**Impact of EPA Deadline**

Although estimates varied widely, depending upon the source, the Division estimated on June 30, 1998 that UST owners and operators would be forced to cease using approximately 25% to 45% of the existing USTs because they would not be in compliance with the EPA standards as of December 22, 1998. On the December 22, 1998 EPA deadline for complying with the new UST standards, the Division undertook an initiative to ensure that UST facilities ceased using all USTs identified by the

* *See glossary at end of report for definition.*

Division's database as being noncompliant. Also, the Division refocused its efforts toward performing compliance inspections of all remaining UST facilities.

Based on the type and age of USTs on June 30, 1998, it was anticipated that a significant percentage of the UST facilities ceasing operations would be found to have environmental contamination for which owners and operators would be unwilling or unable to pay for the necessary remediation. It was anticipated that the State might be required to provide the resources necessary to perform the remediation of contamination at those facilities for which owners and operators could not be located or were unwilling or unable to pay for the remediation. The Division would then pursue the recovery of remediation costs from the appropriate individuals.

As of December 22, 1998, the Division's database indicated that approximately 7,900 (30%) of the approximately 26,000 active USTs were not in compliance with EPA upgrade standards necessary for continued use. Beginning in January 1999, the Division's inspections of all of these suspected substandard USTs resulted in the Division red-tagging* approximately 3,000 of the USTs. During our follow-up audit work performed between September 2000 and May 2001, we requested that the Division indicate the current status of each of the suspected substandard USTs, including whether it had been upgraded, closed, or abandoned or had remained red-tagged, and whether each of the USTs was the source of a release. The Division declined our request to provide us with this data because of limited resources.

* *See glossary at end of report for definition.*

# COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

## EFFECTIVENESS OF UST REGULATION

### COMMENT

**Audit Objective:** To assess the effectiveness of underground storage tank (UST) regulation.

**Conclusion: We concluded that the Storage Tank Division's regulatory efforts had limited effectiveness.** Our assessment disclosed reportable conditions* related to the effectiveness of regulatory efforts, financial responsibility, and program evaluation.

### FINDING

**1. Effectiveness of Regulatory Efforts**

The Division should strengthen its enforcement efforts to help ensure that UST owners and operators comply with UST rules and regulations designed to prevent or minimize environmental contamination.

The Division is responsible for administering and enforcing compliance with State rules and regulations governing the design, construction, installation, registration, and operation of UST facilities. The Division's enforcement activities are designed to determine whether compliance violations exist at the time of UST facility inspections. Depending on the severity of the violation, the Division may conduct follow-up inspections to determine whether UST owners or operators have taken appropriate corrective actions.

To assess the Division's efforts in enforcing, and UST owner and operator compliance with, UST rules and regulations, we accompanied Division field staff on inspection visits to 82 and 71 randomly selected UST facilities during November 2000, and April and May 1998, respectively, in areas served by three Division

* *See glossary at end of report for definition.*

district offices. We concluded that the Division's regulatory efforts had limited effectiveness in attaining UST owner and operator compliance with UST rules and regulations:

a. Although our most recent inspection visits indicated considerably improved compliance with required controls designed to prevent or minimize the amount of environmental contamination caused by a UST release, a significant percentage of the facilities visited were not in compliance with required controls. Our review of three required controls disclosed:

| Required Control | Number of Facilities * | | Instances of Noncompliance | | Noncompliance Percentage | |
|---|---|---|---|---|---|---|
| | 2000 | 1998 | 2000 | 1998 | 2000 | 1998 |
| Release detection | 76 | 51 | 21 | 21 | 28% | 41% |
| Spill containment | 78 | 50 | 7 | 14 | 9% | 28% |
| Out-of-use tank removal | ** | 18 | ** | 9 | ** | 50% |

* Some control requirements did not apply to all facilities visited. This explains the difference between the number of facilities selected for visitation and the number of facilities at which the required control was tested.

** Not tested.

In addition, we reviewed the following two controls that were required beginning December 22, 1998:

| Control | Number of Facilities * | | Instances of Noncompliance | | Noncompliance Percentage | |
|---|---|---|---|---|---|---|
| | 2000 | 1998 | 2000 | 1998** | 2000 | 1998** |
| Corrosion protection | 80 | 48 | 7 | 21 | 9% | 44% |
| Overfill prevention | 78 | 48 | 5 | 24 | 6% | 50% |

* Some control requirements did not apply to all facilities visited. This explains the difference between the number of facilities selected for visitation and the number of facilities at which the control was tested.

** Compliance with these controls was not required at the time we visited facilities in 1998, but noncompliance would prevent these facilities from operating beyond December 22, 1998 without being subject to the Division's statutory enforcement responsibilities.

Noncompliance with reporting and control requirements may explain why our visits detected unreported suspected releases* at 2 (2%) of the 82 facilities visited in 2000 and 7 (10%) of the 71 UST facilities visited in 1998.

b. The Division did not compute the rate at which UST owners and operators corrected compliance violations on the same basis as it computed the rate at which violations were detected through inspections.

The Division's inspection efforts identified the following facility release detection and tank violation data:

| Period | Facilities Inspected | Facilities With Release Detection Violations | Release Detection Violation Rate | Facilities With Tank Violations | Tank Violation Rate |
|---|---|---|---|---|---|
| 10/1/97 - 9/30/98 | 652 | 183 | 28% | 126 | 19% |
| 10/1/98 - 9/30/99 | 3,741 | 615 | 16% | 1,623 | 43% |
| 10/1/99 - 9/30/00 | 1,111 | 420 | 38% | 322 | 29% |

A critical component in the prevention of environmental contamination is UST owner and operator compliance with requirements designed to prevent or detect UST releases. For example, release detection requirements are intended to provide for the identification of a UST release in a timely manner so that the extent of the environmental contamination can be minimized. As indicated by the preceding table, for the period October 1, 1997 through September 30, 1998, Division inspections indicated a facility release detection violation rate of 28%. For the period September 1, 1997 through August 31, 1998, the Division reported a return-to-compliance rate of 40% for facility release detection violations. However, the Division's reported percentage of violations returned to compliance included violations that were detected during inspections performed prior to September 1, 1997. Thus, the Division's reported return-to-compliance rate was not computed on the same basis as its reported violation rate, resulting in information that was not comparable and was misleading. The Division was unable to provide us with the number of facilities, if any, that returned their release detection violations to compliance from the 183 facilities that were determined to have release detection

* *See glossary at end of report for definition.*

violations because at the time it was unable to track individual violations returned to compliance. Also, as a measure of the timeliness of UST owners and operators in correcting violations, the Division did not compile the average length of time necessary for owners and operators to resolve violations detected from inspections.

c. As of September 2000 and June 1998, the Division's database indicated that 1,410 (6%) of approximately 23,000 and 2,410 (9%) of approximately 26,000 USTs, respectively, had been "out of use"* for more than one year. Program rules allow USTs to be temporarily out of use for up to one year, after which time the USTs must be returned to active status or be permanently closed, unless they are in compliance with State standards. The database indicated that as of September 2000 and June 1998, 1,291 (92%) and 1,005 (42%) USTs out of use for more than one year, respectively, were not in compliance with State standards and should have been permanently closed. The following table indicates the number of years that these noncompliant USTs had been temporarily out of use for more than the one allowed year:

| Number of Years Beyond the Allowed Year | Number of USTs | |
|---|---|---|
| | 2000 | 1998 |
| 0-5 | 384 | 284 |
| 6-10 | 519 | 181 |
| 11-15 | 0 | 132 |
| 16-20 | 0 | 153 |
| 21-25 | 0 | 194 |
| 26-30 | 0 | 32 |
| Over 30 | 0 | 29 |
| Unknown | 388 | 0 |
| Total | 1,291 | 1,005 |

Temporarily out-of-use USTs represent a potential environmental contamination source and safety hazard when unattended or unused for an extended period of time.

d. The Division made limited use of the enforcement methods provided by State statutes to compel UST owner and operator compliance with rules and regulations. State statutes provide for red-tagging USTs at facilities that are not in compliance with rules and regulations. Also, statutes provide for financial penalties of up to $5,000 per day for violations of UST rules and regulations.

Prior to the December 22, 1998 State upgrade standards taking effect, the Division red-tagged 55 USTs during the period January 1, 1997 through November 4, 1998 for noncompliance with UST rules and regulations. Subsequent to December 22, 1998, the Division red-tagged approximately 3,000 USTs through September 30, 2000. However, the Division did not pursue financial penalties against the owners and operators of these USTs. The Division referred 25 UST facilities to the Office of Criminal Investigations, Department of Environmental Quality (DEQ), for further enforcement action. Of the 25 UST facilities referred to the Office of Criminal Investigations, 8 facility cases remained open and 17 facility cases had been closed as of March 1, 2002.

Although red-tagging noncompliant USTs has proven effective in most cases, it may not be effective in some circumstances. For example, Division inspectors informed us that they did not red-tag noncompliant USTs when they determined that there was little likelihood that the UST would be used in the future or that the UST was located at an abandoned facility. Also, red-tagging USTs may not be effective when the USTs are used only for the internal need of the UST owner or operator. Internal needs may be met through other sources without complying with required rules and regulations to upgrade or remove the noncompliant UST.

Effective enforcement of UST rules and regulations would help ensure that UST owners and operators are protecting the environment and the public from the health and safety risks posed by UST releases.

## RECOMMENDATION

We recommend that the Division strengthen its enforcement efforts to help ensure that UST owners and operators comply with UST rules and regulations designed to prevent or minimize environmental contamination.

## AGENCY PRELIMINARY RESPONSE

DEQ partially agrees. During the program audit the Division was utilizing an antiquated database system to track compliance and enforcement of UST regulations. Since activation of the new Storage Tank Division Information Database (SID) on August 1, 2001, the Division is better able to track compliance information and the percent of violations returned to compliance. The Division has greatly improved its compliance and enforcement tracking network.

The audit report stated that the Division was not effective in achieving the removal of noncompliant temporarily out-of-use USTs. Temporarily out-of-use USTs based on the September 2000 statistics make up less than six percent of the regulated USTs. Of the six percent, the majority of these are on abandoned or tax reverted properties. The Division has already removed over 500 of these abandoned USTs utilizing either Cleanup and Redevelopment Fund (CRF) or Clean Michigan Initiative (CMI) public funds. The Division is currently verifying the database registration information on temporarily out-of-use USTs to address those remaining noncompliant temporarily out-of-use USTs.

Lastly with regard to this item, the audit stated that the Division made limited use of the enforcement methods provided by state statutes to compel UST owners and operators' compliance with rules and regulations. The Division's revised compliance and enforcement policy adheres to the following basic principles.

1. Compliance and enforcement actions must be timely.

2. Compliance and enforcement actions must be appropriate to the violations.

3. Compliance and enforcement actions must be consistent for like violations.

4. Compliance and enforcement actions in response to repeat or continuing violations must be progressive in nature.

5. Compliance and enforcement actions must be responsive to Division program priorities and needs.

During the period of this program audit the Division red tagged over 3,000 USTs and initiated 128 criminal enforcement actions. Red tagging is a very serious and

effective enforcement tool that is utilized by the Storage Tank Division. The placement of a red placard (red tag) on the fill port of a UST prohibits any further delivery of product to the tank, effectively removing the tank from service and any future retail sales until the appropriate corrective actions have been completed. These actions were initiated consistent with Division policy and have resolved many noncompliance or violations of state statute.

## FINDING

### 2. Financial Responsibility

The Division should improve its effectiveness in enforcing UST owner and operator compliance with the requirement to provide financial responsibility for potential UST release remediation costs.

Title 40, section 280.91 of the *Code of Federal Regulations* required all UST owners and operators to provide financial responsibility by December 31, 1993. Financial responsibility provides financial resources, generally $1 million per release, to remediate future UST releases (i.e., releases discovered after the effective date of the financial responsibility). The Michigan Underground Storage Tank Financial Assurance (MUSTFA) Program was created in 1989 to provide assistance to UST system owners and operators in meeting their required financial responsibility until private insurance was available and to promote compliance with other State laws, such as Part 213 of the Natural Resources and Environmental Protection Act. The MUSTFA Program has provided in excess of $600 million for remediation activities at UST release sites. The MUSTFA Program was declared insolvent on March 31, 1995, and as of June 29, 1995, ended its ability to provide financial responsibility for UST owners and operators.

Upon the insolvency of the MUSTFA Program, UST owners and operators were left to provide financial responsibility through another source, such as self-insurance or private insurance. However, the Division informed us that UST owners and operators were not immediately required to provide financial responsibility because of the sudden and unexpected cessation of the MUSTFA Program and the inability of many UST owners and operators to qualify for other sources of financial responsibility. The Division stated that requiring UST owner and operator compliance with the financial responsibility requirement at the time would not have been prudent, as it would have resulted in the closure of all facilities with pre-1988

USTs that could not provide financial responsibility. According to the Division's database, approximately 3,200 (34%) of the approximately 9,400 UST facilities were not in compliance with the financial responsibility requirement as of January 1999.

In September 1995, the Division adopted a three-phased implementation policy requiring UST owners and operators to provide financial responsibility. Phase one, implemented in July 1995, required UST facilities with all USTs installed after July 1, 1995 to provide financial responsibility. Phase two, implemented November 15, 1995, required UST facilities with all USTs installed after December 22, 1988 to provide financial responsibility. Phase three, implemented December 22, 1999, required all remaining USTs "in use"* to provide financial responsibility. The Division implemented a more effective verification process in October 2000. In October 2000, the Division began requiring all UST owners and operators to submit documentation of financial responsibility when paying their annual registration fee.

We randomly selected 104 UST facilities to test UST owner and operator compliance with the financial responsibility requirement as of September 1, 2000. At our request, the Division instructed the selected UST facilities that they were statutorily required to submit documentation of compliance with the requirement. The results of our test were as follows:

| District or Field Office | Number of UST Facilities Selected for Review | Number of UST Facility Responses | Known Compliance Percentage | Known Noncompliance Percentage | Unknown Compliance Percentage |
|---|---|---|---|---|---|
| A | 19 | 12 | 58% | 5% | 37% |
| B | 9 | 3 | 33% | 0% | 67% |
| C | 24 | 17 | 63% | 8% | 29% |
| D | 6 | 5 | 83% | 0% | 17% |
| E | 8 | 6 | 75% | 0% | 25% |
| F | 11 | 7 | 64% | 0% | 36% |
| G | 9 | 7 | 78% | 0% | 22% |
| H | 8 | 7 | 75% | 13% | 12% |
| I | 10 | 5 | 30% | 20% | 50% |
| Total | 104 | 69 | 61% | 6% | 34% |

We consider the 34% of unknown compliance to be of concern because it could indicate that the UST owners and operators did not have documentation of compliance and therefore did not respond.

The Division declined to follow up with the 35 (34%) UST facilities that did not respond because of the potential for confusion over requests made in connection with the Division's ongoing process of requesting documentation of financial responsibility from UST owners and operators at the time they pay their annual registration fee.

The Division's database, as of September 30, 2000, indicated that 8,974 open UST releases existed in the State. Also, the database indicated that either remediation activity was not taking place or the Division was unaware of the status of remediation at 4,328 (48%) of the 8,974 open UST releases. The database indicated that 2,017 (47%) of these 4,328 UST releases occurred after June 29, 1995. Because of the Division's phased-in implementation of the financial responsibility requirement, resources were not available through financial responsibility sources for those UST releases that occurred after June 29, 1995 for which UST owners and operators were either unable or unwilling to pay for the remediation. We acknowledge that some releases reported after June 29, 1995 were related to abandoned sites. However, we could not identify how many of the 2,017 reported releases related to abandoned sites. To provide funds for the remediation of the most serious UST release sites, the State appropriated approximately $62.9 million from the Cleanup and Redevelopment Sub-Fund (CRF) of the Bottle Deposits Fund and the Clean Michigan Initiative Bond Fund (CMI) for initial remediation activities at 589 of these UST releases during the three fiscal years ended September 30, 1999. The Division is responsible for recovering any State funds used for UST release remediation through a variety of methods (Finding 5). The Division informed us that, because of a lack of available resources, it could not estimate the total amount of funding necessary to complete the remediation of all UST releases occurring after June 29, 1995 for which owners and operators were either unable or unwilling to pay for the remediation.

Because of the Division's three-phased implementation policy and the limited verification of compliance with the statutory requirement, the Division did not always ensure that financial resources were available to remediate contamination caused by UST releases. For example, this specifically allowed those owners and operators with the oldest USTs, which were a greater risk for environmental contamination, to continue to operate without ensuring that financial resources would be available to remediate contamination caused by UST releases. If the Division had required UST owner and operator compliance with the financial

responsibility requirement at the cessation of the MUSTFA Program, it could have increased the likelihood of discovering unknown UST releases during the process of bringing the USTs into a condition necessary to obtain financial responsibility (i.e., compliance with the State upgrade requirements), resulting in an opportunity to begin an earlier start of remediation. Also, requiring compliance with the financial responsibility requirement at the cessation of the MUSTFA Program would have helped to ensure that resources were available to remediate those UST releases that occurred after June 29, 1995. In addition, proactively planning for future resources to remediate environmental contamination would help ensure that the Division has the ability to expediently minimize the public health and safety risk caused by UST releases.

## RECOMMENDATION

We recommend that the Division improve its effectiveness in enforcing UST owner and operator compliance with the requirement to provide financial responsibility for potential UST release remediation costs.

## AGENCY PRELIMINARY RESPONSE

DEQ partially agrees. The audit report suggests that after the Michigan Underground Storage Tank Financial Assurance (MUSTFA) Program became insolvent in 1995, the Division's three phased implementation of financial responsibility placed a limit on resources to cleanup contaminated sites. What is not acknowledged in the audit report was the lack of private insurance available to the universe of tank owners subsequent to the cessation of the MUSTFA. The three phased approach implemented by the Division focused on the 1998 deadline requirements and the ability of the owner/operator to obtaining private insurance. This phased approach prevented gasoline retailers from going out of business resulting in a consistent gasoline supply within the state and less overall liability to the state of Michigan. Subsequent to the 1998 upgrade requirements, private insurance is available to all compliant storage tank owner/operators.

From January 1999 to October 2000, proof of financial responsibility was verified during each facility inspection much like any other regulatory requirement. In October 2000, the Division began requiring all UST owners and operators to submit documentation of financial responsibility with their annual registration fee payment. This has resulted in greater than 90 percent compliance rate with this regulatory requirement.

The Division has made significant improvements in the verification of financial responsibility.

## EPILOGUE

DEQ's response states that the audit report does not acknowledge the lack of private insurance available to the universe of tank owners subsequent to the cessation of the MUSTFA Program. However, during our audit, we obtained documentation of the Department of Natural Resources' (then responsible for the MUSTFA Program) research related to the availability and affordability of private insurance available to tank owners subsequent to the cessation of the MUSTFA Program. In correspondence to members of the Legislature dated December 12, 1994, the director of the Department of Natural Resources summarized the research by stating, "Environmental impairment insurance is available at reasonable cost in Michigan, and I foresee no difficulty in meeting future dates as provided in statute."

## FINDING

### 3. Program Evaluation

The Division needs to improve its process used to evaluate and improve the effectiveness of its UST Regulatory Program.

As of September 30, 2000, the Division was responsible for monitoring approximately 23,200 active USTs at approximately 8,100 UST facilities to help prevent the release of regulated substances into the environment. In addition, the Division was responsible for overseeing the environmental contamination remediation efforts at approximately 9,000 UST releases at approximately 7,100 leaking underground storage tank (LUST) sites.

DEQ had established an overall mission* of improving environmental quality for the protection of public health and natural resources to benefit current and future generations. The Division annually established goals* designed to help DEQ meet its mission. Also, the Division maintained a comprehensive database of its

* *See glossary at end of report for definition.*

regulated facilities and enforcement and oversight efforts. However, the Division had not established the necessary evaluation elements to enable it to measure the effectiveness of its UST Regulatory Program in helping the Division achieve its mission.

For example, one of the Division's goals for fiscal year 1997-98 was to develop and implement coordinated action plans for improving rates of UST facility compliance with State statutes and UST rules. The Division planned to compare Division inspections and enforcement actions with the change in the rate of UST facility compliance. However, the Division had not performed elements necessary to determine the effectiveness of its inspection and enforcement efforts. For example, the Division had not established the level of compliance improvement expected from any given level of inspection and enforcement activity. In addition, the Division had not obtained data to measure the level of UST facility compliance, or computed the actual rate of change in UST facility compliance, after performing inspections and enforcement actions. Therefore, the Division was unable to determine the extent, if any, to which inspections and enforcement actions resulted in a change in the rate of UST facility compliance with State statutes and UST rules.

As noted in Findings 2 and 4, there was a significant rate of UST owner and operator noncompliance with State statutes and UST rules and regulations governing UST operations. In addition, a significant percentage of UST releases had no remediation activity taking place.

The Division can improve its evaluation of the Program's effectiveness by establishing a process to establish performance standards* and goals that describe the desired level of outcomes* based on management expectations, peer group performance, and/or historical performance; performance indicators* for measuring outcomes; a management information system to gather accurate performance data; a comparison of performance data to desired outcomes; a reporting of the comparison results to management; and proposal of changes to the Program to improve effectiveness.

* *See glossary at end of report for definition.*

Improving its process used to evaluate the performance of the Program is critical to ensure that the Division uses its resources most effectively and to allow the Division to identify and make needed revisions to the Program.

### RECOMMENDATION

We recommend that the Division improve its process used to evaluate and improve the effectiveness of its UST Regulatory Program.

### AGENCY PRELIMINARY RESPONSE

DEQ partially agrees. The Division was unable to accurately track performance data to desired outcomes in the old database. With activation of the new SID database in August 2001, targeted criteria can be retrieved and reported quarterly. Quarterly performance data is now automatically generated for reports to DEQ, the Division, the U.S. Environmental Protection Agency, and other interested parties to demonstrate and evaluate the effectiveness of Division programs.

## EFFECTIVENESS OF REMEDIATION EFFORTS

### COMMENT

**Audit Objective:** To assess the effectiveness of the Division's efforts to ensure the remediation of contaminated sites.

**Conclusion: We concluded that the Division's efforts to ensure the remediation of contaminated sites had limited effectiveness.** Our assessment disclosed reportable conditions related to UST release remediation and cost recovery.

### FINDING

**4. UST Release Remediation**

The Division should increase its efforts to help ensure that owners and operators responsible for UST releases perform required environmental contamination remediation activities.

State statutes require the Division to oversee the environmental contamination remediation efforts at releases to ensure the elimination of public health and safety risks. The Division developed a process for initial notification, periodic reporting,

and monitoring of releases to help ensure the success of remediation efforts. State statutes require individuals responsible for remediating UST releases to submit to the Division an initial assessment report depicting the extent of the environmental contamination, a corrective action plan to remediate the contamination, periodic reports indicating the status of the remediation at specific intervals, a final assessment report within one year of the discovery of the release, and a closure report upon acceptable remediation based on Division standards.

Division records indicated that 8,974 and 8,769 open UST releases existed in the State as of September 30, 2000 and November 3, 1998, respectively, that had not been acceptably remediated. Of these releases, 8,192 and 7,839 had existed for more than one year as of September 30, 2000 and November 3, 1998, respectively. The following table shows the risk classification and corrective action classification, based on Division standards, of the 8,192 and 7,839 releases:

| | September 30, 2000 | | | | November 3, 1998 | | | |
|---|---|---|---|---|---|---|---|---|
| Risk | Corrective Action Classification | | | Total Number of | Corrective Action Classification | | | Total Number of |
| Classification * | Active | Inactive ** | Unknown | Releases | Active | Inactive ** | Unknown | Releases |
| Not Classified | 1,368 | 653 | 1,537 | 3,558 | 1,959 | 325 | 1,574 | 3,858 |
| 1 | 805 | 183 | 274 | 1,262 | 657 | 111 | 262 | 1,030 |
| 2 | 287 | 203 | 113 | 603 | 257 | 107 | 99 | 463 |
| 3 | 1,053 | 449 | 383 | 1,885 | 1,066 | 302 | 397 | 1,765 |
| 4 | 505 | 108 | 271 | 884 | 455 | 30 | 238 | 723 |
| Total | 4,018 | 1,596 | 2,578 | 8,192 | 4,394 | 875 | 2,570 | 7,839 |

Source: Storage Tank Division records as of September 30, 2000 and November 3, 1998.

* Risk classification definitions:

1. Immediate threat to human health, safety, or sensitive environmental receptors.

2. Short-term (up to 2 years) threat to human health, safety, or sensitive environmental receptors.

3. Long-term (more than 2 years) threat to human health, safety, or sensitive environmental receptors.

4. No demonstrable long-term threat to human health, safety, or sensitive environmental receptors.

** The "inactive" classification includes those UST releases for which the Storage Tank Division had identified that remediation activity had never begun or was inappropriately stopped.

As shown by the preceding table, Division records indicated that, as of September 30, 2000, approximately 50% of the releases were receiving corrective actions, approximately 20% of the releases were not receiving corrective actions, and the Division was unaware of whether approximately 30% of the releases were receiving corrective actions.

As indicated by the following table, UST releases tended either to be acceptably remediated within a short period of time or to remain contaminated for an extended period of time:

| | September 2000 | | | | August 1998 | | January 1998 | |
|---|---|---|---|---|---|---|---|---|
| | Open Releases * | | Closed Releases * | | Open Releases ** | | Closed Releases *** | |
| Number of Years | Number of Releases | Percentage of Releases | Number of Releases | Percentage of Releases | Number of Releases | Percentage of Releases | Number of Releases | Percentage of Releases |
| Less than 1 | 670 | 7% | 2,925 | 29% | 520 | 6% | 903 | 19% |
| 1 to less than 2 | 719 | 8% | 1,097 | 11% | 667 | 8% | 1,087 | 23% |
| 2 to less than 3 | 594 | 7% | 729 | 7% | 500 | 6% | 599 | 12% |
| 3 to less than 4 | 490 | 5% | 617 | 6% | 633 | 7% | 542 | 11% |
| 4 to less than 5 | 401 | 4% | 589 | 6% | 724 | 8% | 451 | 9% |
| 5 to less than 6 | 672 | 7% | 574 | 6% | 710 | 8% | 433 | 9% |
| 6 to less than 7 | 577 | 6% | 495 | 5% | 949 | 11% | 378 | 8% |
| 7 to less than 8 | 710 | 8% | 313 | 3% | 1,024 | 12% | 241 | 5% |
| 8 through 28 | 4,029 | 45% | 524 | 5% | 2,372 | 27% | 164 | 3% |
| Unknown | 112 | 1% | 2,108 | 21% | 578 | 7% | N/A | N/A |
| Total | 8,974 | 100% | 9,971 | 100% | 8,677 | 100% | 4,798 | 100% |

* Source: Storage Tank Division records as of September 2000.

** Source: Storage Tank Division records as of August 1998.

*** Source: Storage Tank Division records as of January 1998.

N/A: Not applicable

Division administrators informed us that the length of time needed to remediate a UST release may depend on many variables, including whether the UST release contaminated the groundwater at the site. Administrators informed us that UST releases that have contaminated groundwater may take a relatively long time to remediate compared with UST releases that have contaminated only soil. However, as indicated in the following table showing the composition of the UST

release population, groundwater contamination existed at only 3,386 (41%) of the 8,192 UST releases open for one year or longer as of September 30, 2000:

| Number of Years Releases Were Open | Groundwater Contamination? No | Yes | Total |
|---|---|---|---|
| 1 to less than 2 | 589 | 130 | 719 |
| 2 to less than 3 | 432 | 162 | 594 |
| 3 to less than 4 | 352 | 138 | 490 |
| 4 to less than 5 | 264 | 137 | 401 |
| 5 to less than 6 | 341 | 331 | 672 |
| 6 to less than 7 | 173 | 404 | 577 |
| 7 to less than 8 | 337 | 373 | 710 |
| 8 to 28 | 2,318 | 1,711 | 4,029 |
| Subtotal | 4,806 | 3,386 | 8,192 |
| Less than 1 | 610 | 60 | 670 |
| Unknown | 97 | 15 | 112 |
| Total | 5,513 | 3,461 | 8,974 |

Source: Storage Tank Division records as of September 30, 2000

As indicated by the preceding table, the presence of groundwater contamination did not explain the length of time that many of the UST releases had remained open as of September 30, 2000.

Our review of the Division's effectiveness in ensuring that owners and operators responsible for remediating UST releases performed the required remediation activities disclosed:

a. The Division's database did not accurately indicate the UST release risk classification and corrective action classification.

   We determined that three of the Division's district offices were responsible for overseeing remediation activities at 2,871 (60%) of the 4,808 UST releases as of November 3, 1998 with a risk classification of "not classified," 1, or 2 and a corrective action classification of "active" or "unknown." We randomly selected and, in conjunction with Division personnel, reviewed district office files for 134 (5%) of the 2,871 UST releases to determine whether the

documentation supported the risk classification and that corrective action was taking place in compliance with the corrective action plan. The following table indicates the results of our review:

| | Not Classified | Risk Classifications 1 | 2 | 3 | 4 | Closed or Canceled* | Total |
|---|---|---|---|---|---|---|---|
| UST release risk classification per Division database | 114 | 17 | 3 | 0 | 0 | 0 | 134 |
| UST release risk classification per documentation review | 33 | 19 | 16 | 22 | 31 | 13 | 134 |
| Number of releases determined active per documentation review | 1 | 9 | 5 | 5 | 3 | 0 | 23 |
| Percentage of releases determined active per documentation review | 3% | 47% | 31% | 23% | 10% | 0% | 17% |

* This column includes those releases determined acceptably remediated or inappropriately included in the database.

Inaccurate information contained in the database reduces the Division's ability to properly monitor UST releases and may result in unreliable and misleading information being reported to users of the data.

b. The Division made limited use of statutorily provided methods to compel owners and operators responsible for UST releases to comply with their plan for remediating the environmental contamination.

Section 324.21319a of the *Michigan Compiled Laws* provides for the Division to issue administrative orders as a method of compelling owners and operators responsible for UST releases to perform corrective action in cases in which the Division has determined that there may be an imminent danger* to public health and safety caused by the release. A person who violates the terms of the administrative order is subject to civil penalties of up to $25,000

* *See glossary at end of report for definition.*

per day for each day of continuing violation and of up to three times the costs to the State of response activities in a cost recovery action, if the State must conduct corrective actions to mitigate an imminent and substantial danger to public health, safety, welfare, or the environment.

During our field visits to UST facilities, we noted numerous instances in which owners and operators responsible for UST releases chose a different method of remediating site contamination to reduce costs than that stated in their corrective action plans. For example, in one case, the individual responsible for remediating the contamination at a UST release site chose to hand-bail released contaminants from a monitoring well once a month rather than continuously operating a planned mechanical system to pump and filter contaminated groundwater, as stated in the site's corrective action plan. Division personnel stated that this change in method resulted in a significant immediate cost saving to the owner. The change also resulted in significantly lengthening the time needed for remediation.

The Division informed us that from 1998 through 2000, it had issued administrative orders for 5 UST facilities. As of March 2002, the Division was pursuing further court action against 3 of these UST facilities that were not in compliance with the orders.

Division procedures required that further enforcement action against UST facilities not in compliance with laws be proposed based on prioritization factors, including the risk to the public health and the environment. The Division informed us that limited resources prevented it from taking action on all noncompliant UST facilities.

c. The Division made limited use of financial penalties provided by statute to compel owners and operators responsible for UST releases to comply with the Division's remediation reporting requirements.

To provide a basis for monitoring UST release remediation activities, statutes require owners and operators responsible for remediating UST releases to submit an initial assessment report within 90 days from the date of the discovery of the release and a final assessment report within one year from the date of the discovery of the release. Division records indicated that, as of

September 30, 2000 and May 1, 1998, 1,276 and 559 initial assessment reports, respectively, and 1,900 and 1,244 final assessment reports, respectively, were overdue. As of September 30, 2000 and May 1, 1998, both initial and final assessment reports were overdue for 765 and 303 of these UST releases, respectively.

Our visits to 3 of the Division's district offices disclosed that Division employees responsible for monitoring UST release remediation activities made numerous and repeated requests to obtain the required reports. These attempts were generally ineffective in attaining compliance with reporting requirements by the responsible individuals.

As of January 9, 2001, the Division implemented a policy that provided for the imposition of financial penalties on UST facility owners and operators who did not submit the required reports based on mitigating factors and the risk to the public health and the environment.

Section 324.21313a of the *Michigan Compiled Laws* provides progressive fines from $100 to $1,000 per day for failure to provide required reports to the Division. Increased use of statutorily provided financial penalties may encourage owners and operators responsible for UST releases to comply with the reporting requirements.

d. The Division did not ensure that owners or operators responsible for UST releases submitted the risk classifications of the releases, as required by statute. As of September 30, 2000 and November 3, 1998, Division records indicated that the Division had not obtained the environmental contamination risk classification for 3,558 (43%) of the 8,192 and 3,858 (49%) of the 7,839 open UST releases that had been in existence for more than one year, respectively. Records indicated that active remediation was taking place at 1,368 (38%) and 1,959 (51%) of these releases, respectively. However, either remediation activity was not being conducted or the Division's database indicated no record of remediation activity at the remaining 2,190 (62%) and 1,899 (49%) of these UST releases, respectively.

Section 324.21314a of the *Michigan Compiled Laws* requires the Division to establish an environmental contamination risk classification system for UST

releases considering the impact to public health and safety. Owners and operators responsible for remediating UST releases are responsible for submitting to the Division the appropriate risk classifications for each release.

Compelling owners and operators responsible for UST releases to perform necessary remediation activity and to submit required reports indicating UST release remediation activities would provide the Division with assurance that the environmental contamination remediation is being accomplished in accordance with the corrective action plans.

Many of the UST releases monitored by the Division may have initially been detected while administrative responsibility for the UST Regulatory Program was in other departments. However, it is essential that the Division ensure that owners and operators responsible for the remediation of the releases provide the Division with the risk classifications that these releases pose to public health and safety to properly prioritize its remediation oversight resources.

## RECOMMENDATION

We recommend that the Division increase its efforts to help ensure that owners and operators responsible for UST releases perform required environmental contamination remediation activities.

## AGENCY PRELIMINARY RESPONSE

DEQ partially agrees. DEQ had difficulty responding to the elements discussed in this finding primarily due to the confusion over the relationship of the statistics provided in the tables and those referenced in the text.

As referenced in the audit report, there are approximately 9,000 open UST releases statewide. The majority of these releases were under remediation prior to June 29, 1995, when MUSFTA funding was available to remediate contamination caused by UST releases. Currently, each project manager in the Leaking Underground Storage Tank (LUST) Program oversees approximately 270 release sites. Part 213, Leaking Underground Storage Tanks, of the Natural Resources Environmental Protection Act, 1994 PA 451, as amended, is very prescriptive in the reporting obligations of owners of LUST sites. Because of the high ratio of release sites to Division project managers, the statute upon its inception provided for audit reviews of the reports and remediation activities performed by the liable parties. In

many cases, project management staff has to assess the liability of multiple parties for a site. In addition, liable parties often claim insufficient financial resources to accomplish an expedited cleanup, so staff has to assess the parties' ability to pay the remediation costs. When compliance and enforcement actions are warranted, these actions are initiated in conformance with the Division's compliance and enforcement policy. This policy was stated in the first item of the agency responses.

Remediation of contaminated sites is dependent on a number of variables, soil type, depth to groundwater, groundwater flow direction, groundwater flow rate, utilities in the area, off-site access, remediation technologies and associated costs, and the type of closure the owner or operator wants to achieve.

Since activation of the new Division database, Division project managers have been requested to systematically review the information migrated from the old database and perform quality assurance and quality control checks for each site. This review should be completed by the end of 2002 and will provide more accurate information concerning the status of site risk classifications and remediation activities.

The audit cited limited use of statutorily provided methods to compel owners and operators responsible for UST releases to comply with their plan for remediation of environmental contamination. The Division has consistently followed its compliance and enforcement policy utilizing progressive enforcement measures against those owners and operators that are liable. These measures are sometimes hampered due to the liable party's inability to pay for site remediation. This has resulted in the use of state funds to address the more serious public health or environmental risks at the site.

The audit cited limited use by the Division of financial penalties provided by statute to compel owners and operators who are liable to comply with the Division's remediation reporting requirements. The Division has a procedure to administer penalties for late reports and follow-up actions as part of the compliance and enforcement policy. While computing and issuing penalties is a matter of routine, the liable party can appeal a penalty to the circuit court. Responding to such an appeal through the court system is resource intensive and can place resource limitations on the Division's ability to take on other enforcement actions.

## FINDING

### 5. Cost Recovery

There was limited recovery of State funds spent on the remediation of contaminated sites. As of June 30, 2001, the Division had expended approximately $12.6 million of State funds on the remediation of contaminated sites of which it had recovered approximately $136,000. Also, the Division had outstanding liens of approximately $428,000 on sites for which it had not yet recovered the State funds expended. In addition, the Division did not maintain a database to provide timely and relevant information regarding the population of UST sites where public funds were expended.

Section 324.20102(e) of the *Michigan Compiled Laws* states that the responsibility for the cost of response activities pertaining to a release or threat of release and repairing injury, destruction, or loss to natural resources caused by a release or threat of release should not be placed on the public, except when funds cannot be collected from, or a response activity cannot be undertaken by, a person liable under this part. Section 324.20138 of the *Michigan Compiled Laws* states that all unpaid costs and damages for which a person is liable under Section 324.20126 of the *Michigan Compiled Laws* constitute a lien in favor of the State on a facility that has been the subject of response activity by the State and is owned by that person. Section 324.20138 directs the Division to place a lien for the amount of money spent on the facility or, subject to certain exceptions, on the personal property of the individual responsible for the UST release. In addition, Section 324.20126a(3) of the *Michigan Compiled Laws* provides for interest to be assessed on amounts owed for remediation activities performed by the State. Section 324.20140 of the *Michigan Compiled Laws* limits the time frame, with exceptions, for filing a lien to six years from the initiation of on-site remediation activity.

The Division had four major sources of public funds available for performing the remediation of UST releases and UST site rehabilitation where the liable party was unknown or was unwilling or unable to conduct the necessary rehabilitation or remediation activities. Specific conditions at each UST project site determined the specific funding source for the Division's activities. Through September 30, 1998, the Division was appropriated funds from the MUSTFA Fund for the purpose of performing emergency remediation activities at UST release sites. These emergency remediation activities included the removal of leaking USTs and activities to eliminate the risk of groundwater contamination. The Cleanup and

Redevelopment Sub-Fund (CRF) provided funding to address acute health or environmental risks. CRF projects included acute or potential impacts to drinking water wells and releases of UST contents into groundwater. The Clean Michigan Initiative Bond Fund (CMI), approved by voters in 1998, provided funding through general obligation bonds to rehabilitate or remediate UST sites for both redevelopment and environmental projects. CMI redevelopment projects included UST tank removals and demolition of abandoned buildings at sites that have high redevelopment potential. Environmental projects are proposed for corrective action at sites that have an imminent or substantial endangerment to the public health and/or environment. The Contingency and Emergency Fund (C & E) provided funding for the purpose of remediating the acute risk of UST releases to human health, safety, and/or environmental receptors. C & E projects included providing bottled water to residences with contaminated drinking water and emergency treatment of drinking water or well replacements.

The following table shows the approximate amount of funds appropriated and expended and the number of sites treated by major public funding source:

| | As of June 30, 2001 | | | | As of September 30, 1998 | | | |
|---|---|---|---|---|---|---|---|---|
| | Appropriated | | Expended | | Appropriated | | Expended | |
| | Dollar Amount | Number of Sites | Dollar Amount | Number of Sites | Dollar Amount | Number of Sites | Dollar Amount | Number of Sites |
| MUSTFA | $ 6,000,000 | * | $ 2,778,000 | 35 | $ 6,000,000 | * | $ 2,778,000 | 35 |
| CRF | 50,332,000 | 234 | 7,335,000 | 150 | 29,500,000 | 101 | 5,294,000 | 65 |
| CMI | 15,682,000 | 454 | 1,838,000 | 272 | 0 | 0 | 0 | 0 |
| C & E | 8,000,000 | * | 637,000 | 19 | 2,000,000 | * | 213,000 | 2 |
| Total** | $ 80,014,000 | 688 | $ 12,588,000 | 476 | $ 37,500,000 | 101 | $ 8,285,000 | 102 |

Source: Storage Tank Division records as of June 20, 2001 and various DEQ appropriations acts.

* A lump sum appropriation with no specific sites listed in the appropriation.

** The number of sites may be duplicative as a site may receive funding from more than one funding source.

Our review of the Division's efforts to recover public funds spent on the rehabilitation of UST sites and on the remediation of environmental contamination caused by UST releases disclosed:

a. The Division limited its use of statutorily provided powers that help ensure the recovery of public funds. Also, the Division may need to assess the effectiveness of its statutory powers in accomplishing the recovery of public funds and, if necessary, work with the Legislature to strengthen the Division's ability to ensure the recovery of public funds.

   The Division stated that its primary mechanisms for the recovery of public funds spent for remediation activities at UST release sites were negotiated settlements and the placement of liens on the property on which the Division spent public funds. From February 1991 through September 1998, the Division placed liens in the amount of approximately $1.9 million on only 11 of 102 (11%) sites at which it had spent public funds. As of August 2001, the Division had collected only 1 of these liens in the amount of $10,000. The Division determined that 1 lien in the amount of $1.3 million was uncollectible. Two liens, totaling approximately $80,000, were still outstanding as of August 2001. The remaining 7 liens, totaling approximately $500,000, were released or resolved without collection of the lien.

   From October 1998 through June 2001, the Division placed liens in the amount of approximately $348,000 on only 12 (3%) of 476 sites at which it had spent public funds. As of August 2001, the Division had negotiated a settlement collected of approximately $126,000 from 1 other site.

   Also, the Division had not assessed interest on any of the amounts owed to the State for remediation and rehabilitation activities performed. In addition, the Division did not attempt to place liens on the personal property of any of the individuals responsible for the sites at which the Division spent public funds for remediation and rehabilitation activities.

b. The Division did not maintain a database sufficient to provide management with timely and relevant information regarding the population of UST sites where the Division had expended public funds and any cost recovery actions taken.

As of August 2001, the Division had not compiled a comprehensive database that included data concerning the Division's expenditure of public funds for the remediation and rehabilitation of UST sites. As a result, the Division was unable to provide us with information necessary to perform a comprehensive evaluation of the effectiveness of its cost recovery efforts. For example, the Division could not provide us with a list of the entire population of UST sites at which it had spent public funds, a report of the prioritization of sites for cost recovery efforts, or those sites for which the Division had determined that costs were unrecoverable and recovery would not be pursued. In addition, the Division was unable to readily provide us with complete information regarding the status of sites on which the Division had placed liens.

The Division informed us that the establishment of liens on property on which the Division had spent public funds had not been a priority because statutes provided the Division a time period of six years from the initiation of corrective actions during which it could place a lien. However, in January 2001, the Division hired an individual to coordinate the Division's cost recovery efforts. As of July 2001, this employee was in the process of establishing a database of UST sites on which the Division had spent public funds. When completed, the database was intended to provide Division management with information useful for directing future cost recovery efforts.

The Division's ability to effectively recover State funds spent on rehabilitation and remediation activities at privately owned facilities would help ensure that the cost of such activities is not borne by Michigan taxpayers.

## RECOMMENDATIONS

We recommend that the Division more effectively use its statutorily provided powers to help ensure the recovery of State funds spent on the remediation of contaminated sites.

We also recommend that the Division assess the effectiveness of its statutory powers in accomplishing the recovery of public funds and, if necessary, work with the Legislature to strengthen the Division's ability to ensure the recovery of public funds.

We further recommend that the Division maintain a database to provide timely and relevant information regarding the population of UST sites where public funds were expended.

## AGENCY PRELIMINARY RESPONSE

DEQ partially agrees. In this instance, the audit report did not clearly identify the type of sites that were nominated to receive public funding and thus subject to cost recovery. The criteria established by the Division for a site to receive public funding was limited to abandoned or tax reverted sites, or where the liable party did not have the ability to pay for the response activity. Sites are generally nominated by the district offices and finally screened by the Division before being placed on the appropriations list for funding. Limited emergency funds are available annually to address sites where there is a health hazard or where an imminent and substantial danger exists. Because of the above factors, there is no financially viable owner or operator in the majority of cases, therefore the only asset that can be recovered is the value of the property.

The audit did not identify the years when public funds became available to the Division. Prior to 1997, limited public funds were only available through the MUSTFA Emergency Fund. In 1997, CRF funding became available and in 1999 CMI funding became available. Thus, public funds have only been available in the most recent years. The audit report would lead the reader to believe that these funds have been readily available since the creation of the division in 1994. In fact, appreciable expenditures of these public funds through the execution of cleanup contracts have only occurred in the last two years following the audit period.

The audit stated that "the Division limited its use of statutorily provided powers that help ensure the recovery of public funds." The assertion made in this statement would only be true if there was a viable party where a valid cost recovery claim could be pursued. In fact, there are very few viable parties where a cost recovery claim can be made. In most instances, the only asset the liable party has is the value of the property they possess. This is why the initial cost recovery mechanism is the placement of a lien on the property to preserve the Division's cost recovery options.

The Division has utilized liens as an effective tool to secure cost recovery actions where public funds have been expended at contaminated sites owned by

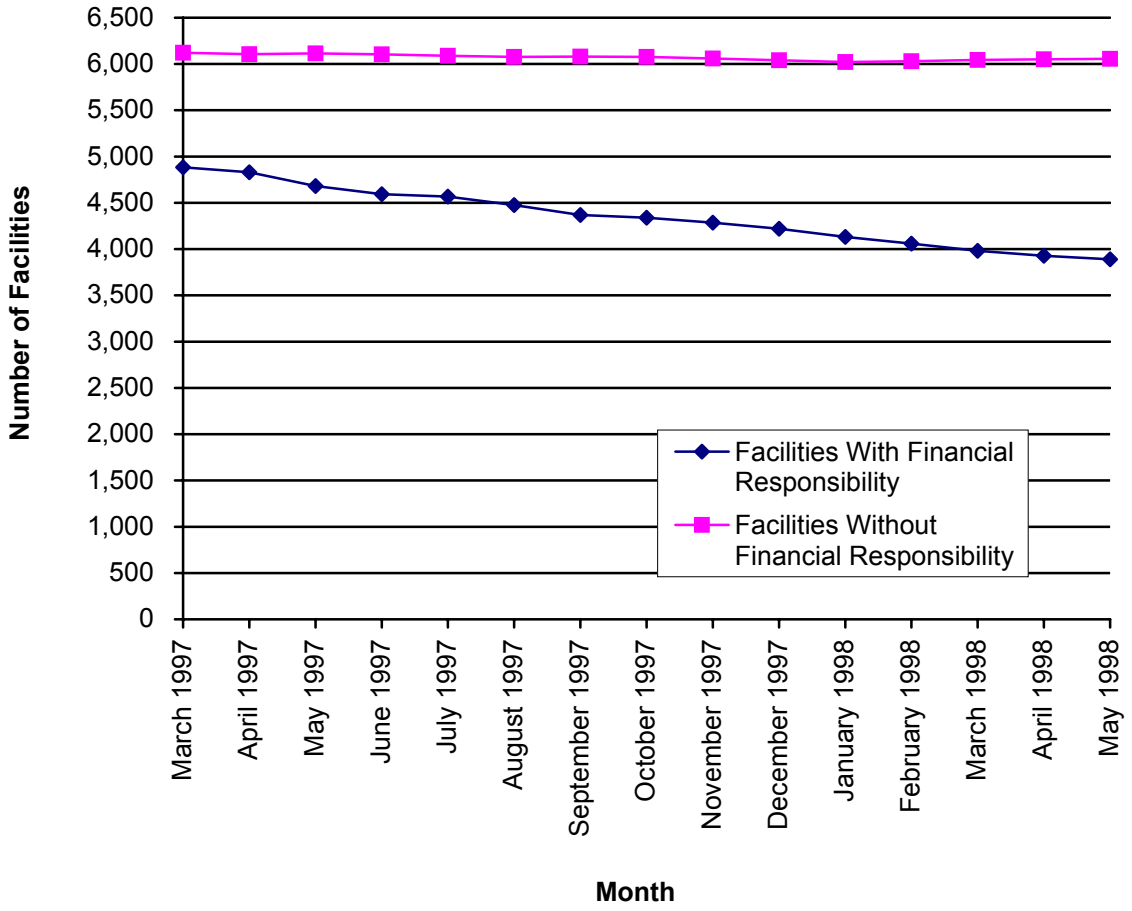
responsible parties. Perfection of a lien with the appropriate county register of deeds is authorized by the Division when the expenditure of public funds exceeds $50,000 or a lesser amount, if appropriate, for corrective action conducted at the site. The Division can perfect a lien within six years of initiation of physical on-site construction activities. As previously mentioned most cleanup funding became available starting in 1997. Therefore, the option of placing a lien is still available to the division for most sites. A lien may be released, when the Division determines that all the accumulated corrective action costs incurred by the state are recovered or a settlement is reached with the responsible party.

With the activation of the new Division database, the Division has started tracking public fund expenditures at sites and has established a threshold amount that would initiate cost recovery actions consistent with the provisions provided in the statute. These actions are currently being taken for those publicly funded sites referenced in the audit report.

# SUPPLEMENTAL INFORMATION

Exhibit

STORAGE TANK DIVISION
Active UST Facilities With and Without Financial Responsibility
From March 1997 Through May 1998




Source: Storage Tank Division's database as of June 2, 1998.

## Glossary of Acronyms and Terms

| | |
|---|---|
| **aboveground storage tank (AST)** | A tank or combination of tanks, including the pipes that are connected to the tank or tanks or ancillary equipment containment systems, if any, which is, was, or may have been used to contain an accumulation of liquids and which has less than 10% of its volume, including the volume of the underground pipes that are connected to the tank or tanks, beneath the surface of the ground. |
| **active UST** | A UST that has not been properly closed by removal or closure in place. |
| **baseline environmental assessment (BEA)** | A process that allows the purchase or operation of a site of environmental contamination without being held liable for the existing contamination. This is done by gathering information about the property being transferred so that existing contamination can be distinguished from any new releases that might occur after the new owner or operator takes over the property. |
| **carcinogen** | A material that induces excessive or abnormal growth in an organism. |
| **cathodic protection** | A technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current. |
| **C & E** | Contingency and Emergency Fund. |
| **CMI** | Clean Michigan Initiative Bond Fund. |

| | |
|---|---|
| **confirmed UST release** | An authenticated suspected release. |
| **corrective action** | The investigation, assessment, cleanup, removal, containment, isolation, treatment, or monitoring of regulated substances released into the environment or the taking of actions as may be necessary to prevent, minimize, or mitigate injury to the public health, safety, or welfare; the environment; or natural resources. |
| **CRF** | Cleanup and Redevelopment Sub-Fund. |
| **DEQ** | Department of Environmental Quality. |
| **DNR** | Department of Natural Resources. |
| **effectiveness** | Program success in achieving mission and goals. |
| **environmental contamination** | The release of a hazardous substance or the potential release of a discarded hazardous substance in a quantity that is, or may become, injurious to the environment or to the public health, safety, or welfare. |
| **financial responsibility** | Available money or insurance to cover the costs of cleanups, property damage, and third-party compensation for bodily injury resulting from LUSTs. Prior to June 29, 1995, the MUSTFA Fund was the mechanism of financial responsibility for over 7,000 tank owners or operators in Michigan. Also referred to as "financial assurance." |
| **goals** | The agency's intended outcomes or impacts for a program to accomplish its mission. |
| **groundwater** | The supply of fresh water found beneath the earth's surface, usually in aquifers, which is a source of water for wells and springs. |

| | |
|---|---|
| **hazardous substance** | Any substance defined as such in the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or any mixture of such substances and petroleum. |
| **imminent danger** | A condition or practice that could reasonably be expected to cause death, disease, or serious physical harm immediately or before the impending danger can be eliminated through enforcement procedures otherwise provided. |
| **in use** | When a UST or a UST system contains a regulated substance of more than one inch in depth. |
| **LUST** | leaking underground storage tank. |
| **LUST site** | Distinct locations, usually separated by address, where one or more USTs are or were located and at which a release has occurred. There may be multiple unique releases at a LUST site. Also referred to as a "UST release site" (Section 324.21303(f) of the *Michigan Compiled Laws*). |
| **mission** | The agency's main purpose or the reason that the agency was established. |
| **MUSTFA** | Michigan Underground Storage Tank Financial Assurance. |
| **NREPA** | Natural Resources and Environmental Protection Act. |
| **operator** | A person who is presently, or was at the time of a release, in control of, or responsible for, the operation of a UST system. |
| **outcomes** | The actual impacts of the program. |
| **out of use** | When a UST system is not in use, i.e., contains less than or equal to one inch in depth of a regulated substance. |
| **owner** | A person who holds, or at the time of a release held, a legal, equitable, or possessory interest of any kind in a UST system |

or in the property on which a UST system is located, such as a trust, vendor, vendee, lessor, or lessee. However, "owner" does not include a person or a regulated financial institution acting in a fiduciary capacity that, without participating in the management of a UST system and without being otherwise engaged in petroleum production, refining, or marketing relating to the UST system, holds indications of ownership primarily to protect the person's or the regulated financial institution's security interest in the UST system or the property on which it is located or to implement the terms of a trust agreement.

**performance audit** An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.

**performance indicators** Information of a quantitative or qualitative nature used to assess achievement of goals and/or objectives.

**performance standard** A desired level of output or outcome.

**person** An individual; partnership; joint venture; trust; firm; joint stock company; corporation, including a government corporation; association; local unit of government; commission; the State; a political subdivision of a state; an interstate body; the federal government; a political subdivision of the federal government; and any other legal entity.

**QC** qualified UST consultant.

**red-tagging** Attachment of a notice to a UST which indicates that addition of a regulated substance into the UST is prohibited by law.

**regulated substance** Either of the following:

a. A substance defined in Section 101(14) of Title I of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Public Law 96-510, Title 42 *USC*, Section 9601 et seq, but not including a substance regulated as a hazardous waste under Subtitle C of the Solid Waste Disposal Act of 1965, Title II of Public Law 89-272, as amended, Title 42 *USC*, Sections 6921 through 6931 and 6933 through 6939b.

b. Petroleum, including crude oil or any fraction of crude oil that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). Petroleum includes mixtures of petroleum with minimal quantities of other regulated substances and also includes petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, or finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, and petroleum solvents.

**release** Any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from a UST into groundwater, surface water, or subsurface soils. Often this word is interchanged with "leak" or "loss."

**release detection** Determining whether a release of a regulated substance has occurred from the UST system into the environment or into the small space between the UST system and its secondary barrier or secondary containment around it. Release detection has been required since December 22, 1993.

**remediation (remediate)** Activities conducted to protect human health, safety, and the environment. These activities include evaluating risk, making

"no further action" determinations, monitoring, institutional controls, engineering controls, and designing and operating clean-up equipment. Also, a cleanup of environmental contamination.

**reportable condition** A matter that, in the auditor's judgment, represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.

**risk-based corrective action** A consistent decision-making process for the assessment and response to UST releases, based on the protection of human health and the environment. The process uses a tiered approach by which corrective action activities are tailored to site-specific conditions and risks.

**SID** Storage Tank Division Information Database.

**strict liability** Basis for determining responsibility for remediation of environmental contamination caused by a UST release whereby all individuals associated with ownership or responsibility for operation of a UST are held accountable.

**suspected release** Questioned contamination based on the discovery of released regulated substances at a UST site or in the surrounding area, such as the presence of UST contents or vapors in soils, basements, sewer and utility lines, and nearby surface waters; unusual operating conditions observed by owners and operators, such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or any unexplained presence of water in the tank, unless system equipment is found to be defective but not leaking and is immediately repaired or replaced; monitoring results from a release detection method indicate a release may have occurred, unless either of the following conditions is satisfied: (1) the monitoring device is found to be defective and is immediately

repaired, recalibrated, or replaced and additional monitoring does not confirm the initial result, or (2) in the case of inventory control, a second month of data does not confirm the initial result.

**tank** A stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, or plastic) that provide structural support.

**tank closure** The process of either physically removing a tank or, if it cannot be removed, filling it with an inert solid material, such as sand or cement.

**underground storage tank or underground storage tank system (UST or UST system)** A tank or combination of tanks, including underground pipes connected to the tank or tanks or underground ancillary equipment containment systems, if any, which is, was, or may have been used to contain an accumulation of regulated substances and the volume of which, including the volume of underground pipes connected to the tank or tanks, is 10% or more beneath the surface of the ground. A UST system does not include any of the following:

a. A farm or residential tank which has a capacity of 1,100 gallons or less and which is used for storing motor fuel for noncommercial purposes.

b. A tank used for storing heating oil for consumptive use on the premises where the oil is stored.

c. A septic tank.

d. A pipeline facility, including gathering lines, regulated under either of the following:

1. The Natural Gas Pipeline Safety Act of 1968, Public Law 90-481, as amended, Title 49 *USC*, appendix

Sections 1671 to 1677, 1679A to 1682, and 1683 to 1687.

2. Sections 201 - 215 and 217 of the Hazardous Liquid Pipeline Safety Act of 1979, as amended, Title II of Public Law 96-129, Title 40 *USC*, appendix Sections 2001 to 2014.

e. A surface impoundment, pit, pond, or lagoon.

f. A stormwater or wastewater collection system.

g. A flow-through process tank.

h. A liquid trap or associated gathering lines directly related to oil or gas production and gathering operations.

i. A storage tank situated in an underground area, such as a basement, cellar, mineworking, drift, shaft, or tunnel, if the storage tank is situated on or above the surface of the floor.

j. Any pipes connected to a tank that is described in subparagraphs a. through i. and k. through p. of this paragraph.

k. A UST system holding hazardous wastes listed or identified under the provisions of Subtitle C of the Solid Waste Disposal Act of 1965, Title II of Public Law 89-272, as amended, Title 42 *USC* Sections 6921 to 6931 and 6933 to 6939b, or a mixture of such hazardous waste and other regulated substances.

l. A wastewater treatment tank system that is part of a wastewater treatment facility regulated under the provisions of Section 307(b) of Title III or Section 402 of Title IV of the federal Water Pollution Control Act of 1972, as amended, Title 33 *USC*, Sections 1317 and 1342.

m. Equipment or machinery that contains regulated substances for operational purposes, such as hydraulic lift tanks and electrical equipment tanks.

n. A UST system that has a capacity of 110 gallons or less.

o. A UST system that contains a minimal concentration of regulated substances.

p. An emergency spill or overflow containment UST system that is emptied within 10 days after use.

***USC*** — *United States Code*.

**U.S. Environmental Protection Agency (EPA)** — The federal agency that enforces environmental laws that are primarily contained in Title 40 of the *Code of Federal Regulations*.