REVIEW AND STATUS OF PETROLEUM RELEASE PROGRAMS
Department of Environmental Quality
September 14,2007

Underground Storage Tank Installer and Inspector Licensing and Permitting Act
Title 75, Chapter 11, Part 2
DEQ Permitting and Compliance Division
Waste and Underground Tank Management Bureau – Ed Thamke, Bureau Chief
Underground Storage Tank Section - Bill Rule, Program Manager
- Installer and inspector license requirements
- Installation, modification and closure permit
  Installer, inspector and operator training

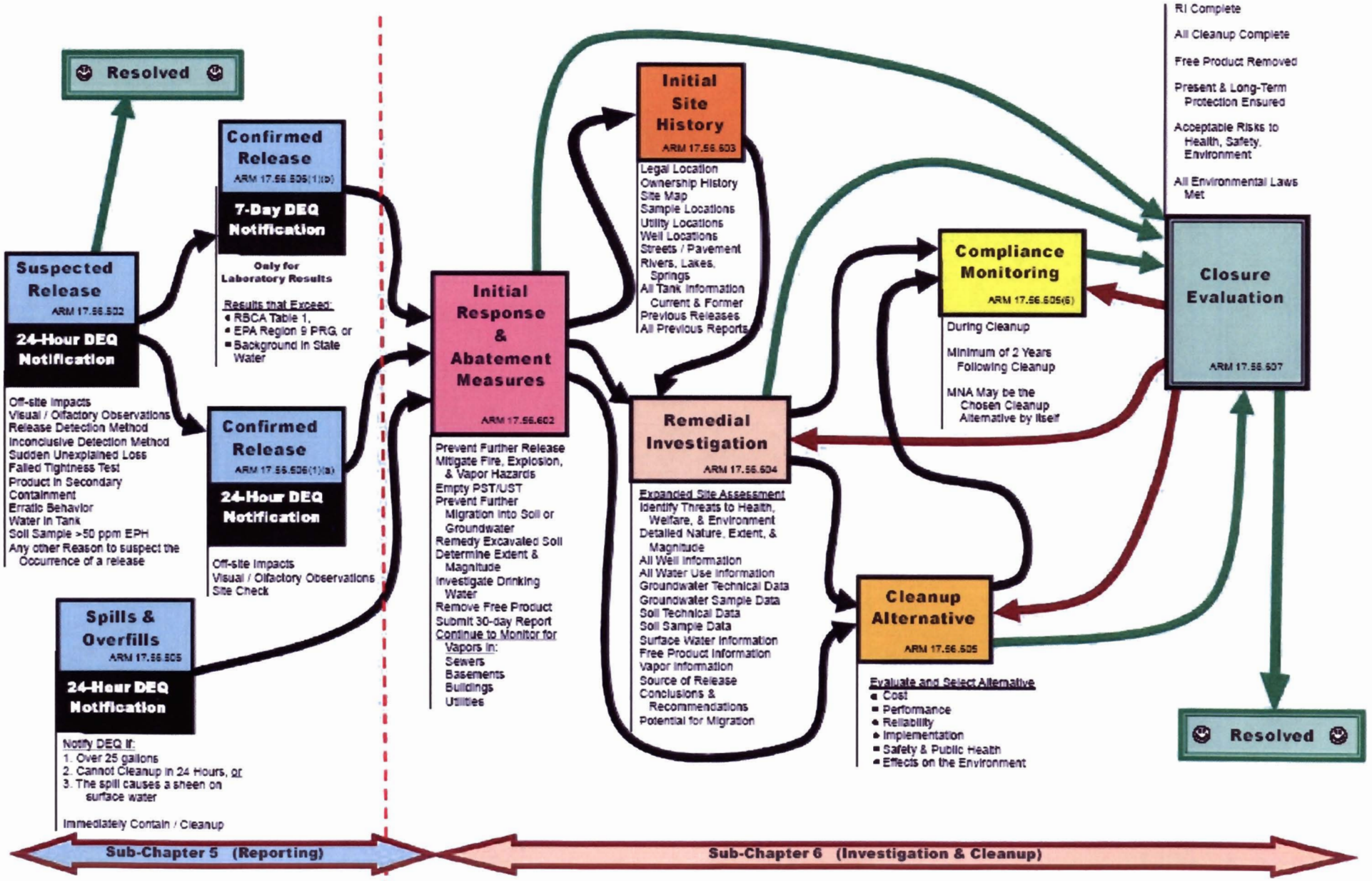
Underground Storage Tank Act
Title 75, Chapter 11, Part 5
DEQ Permitting and Compliance Division
- Inspections and operating permits
- Standards for design, construction, installation and closure
- Release detection, reporting, prevention and corrective action requirements
- Compliance assistance and enforcement

Petroleum Storage Tank Cleanup Act
Title 75, Chapter 11, Part 3
Petroleum Tank Release Compensation Board
Terry Wadsworth, Executive Director
- Petroleum Tank Release Cleanup Fund
- Petroleum Tank Release Compensation Board
- Provide financial resources and procedures to reimburse owners and operators for corrective action costs and third party damages
- Review claims and approve cost reimbursement
- Assist owner/operators in meeting financial assurance requirements and provide incentive to improve facilities and minimize releases

DEQ Remediation Division
Hazardous Waste Site Cleanup Bureau – John Arrigo, Acting Bureau Chief
Petroleum Technical Section – Scott Gestring and Jeff Kuhn, Program Managers
- Require necessary investigation and cleanup, review and approve work plans
  Compliance assistance and enforcement

Current Status
4,363 releases confirmed
2,705 closed – no further action
1,658 under active investigation or cleanup
(200 ground water management / long-term monitoring)

Petroleum Release Investigation and Cleanup Processes



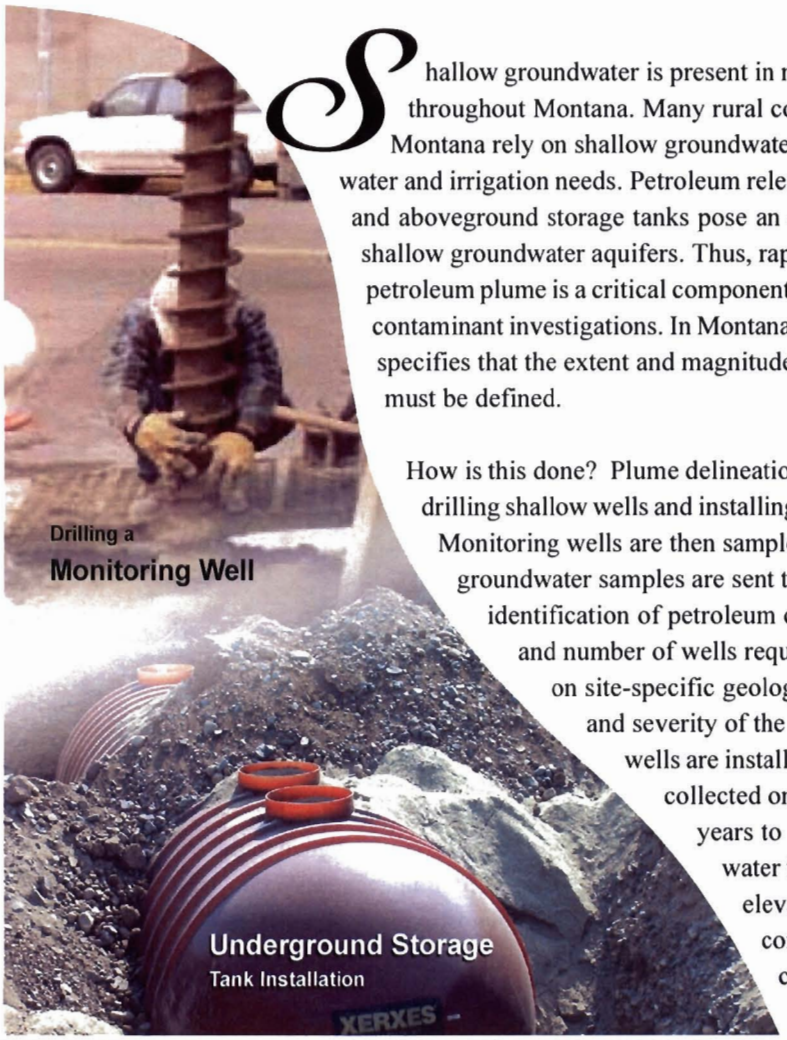
MONTANA UNDERGROUND STORAGE TANK PROGRAM NEWSLETTER

MUST News

Department of Environmental Quality

Summer Issue 2007

Why Does DEQ Collect Groundwater Data?



Shallow groundwater is present in many communities throughout Montana. Many rural communities in Montana rely on shallow groundwater for potable drinking water and irrigation needs. Petroleum releases from underground and aboveground storage tanks pose an ever present risk to shallow groundwater aquifers. Thus, rapid identification of a petroleum plume is a critical component of all environmental contaminant investigations. In Montana, ARM 17.56.604(3) specifies that the extent and magnitude of a petroleum release must be defined.

How is this done? Plume delineation is accomplished by drilling shallow wells and installing monitoring wells. Monitoring wells are then sampled on a periodic basis and groundwater samples are sent to an analytical lab for identification of petroleum constituents. The depth and number of wells required at each site depends on site-specific geologic conditions and the size and severity of the release. Once monitoring wells are installed, samples are normally collected on a quarterly basis for two years to identify trends in groundwater flow direction and elevation, and contaminant concentrations. The data collected is used in the

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Montana Department of Environmental Quality

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Remediation Web: **www.deq.mt.gov/rem/index.asp**

Why Does DEQ Collect Groundwater Data? - *continued from page 1*

decision-making process to establish a remediation system design that meets the needs of each site. Although some sites may share similar groundwater characteristics, each site must be viewed individually. In some situations, utility corridors constructed at or near the groundwater interface may represent difficult challenges due to the possibility of redirecting groundwater flow direction and channeling contaminants significant distances from a release area. In addition, some utilities, such as PVC waterlines, may be substantially at risk due to permeation from constituents such as benzene.

Even after floating accumulations of gasoline or diesel are removed from groundwater at a release site, additional remediation and monitoring are typically required to meet soil and groundwater cleanup standards. Specific cleanup standards are specified in Montana's Tier 1 Risk Based Correction Action (RBCA) guidelines posted on the Montana DEQ Petroleum Release Section (PRS) website at **http://deq.mt.gov/LUST/rbsls/dnldrbsls.asp**. Due to the solubility and recalcitrance of some petroleum compounds, long-term monitoring (LTM) may be required for specific worst-case monitoring wells after the active cleanup phase of a project is completed. Selected wells can be sampled on 1, 2 or 3 year intervals depending on site-specific conditions, and periodic letter reports summarizing groundwater elevations and analytical results are submitted to Montana DEQ PRS. Sites designated for LTM are assigned to a groundwater management (GWM) category for database tracking purposes. These sites must meet the requirements of Technical Guidance Document #12 (see **http://www.deq.mt.gov/LUST/TechGuidDocs/techguid12.asp)**.

Once groundwater contaminants reach state standards, a petroleum release site can be evaluated for closure. If the site meets closure requirements, no additional groundwater monitoring is required and a site can be closed with a "no further action" letter. Project monitoring wells can then be abandoned as part of site closure. ■

PTRCB Release Eligibility Criteria for Aboveground Storage Tank Facility

For petroleum releases occurring on or after December 17, 2004, to be eligible for financial assistance from the fund the aboveground storage tank systems are required to be in compliance with the following PTRCB requirements:

Aboveground storage tanks at a commercial facility:

- Audible alarm that will sound when the liquid level reaches 90% of the tank capacity; or a means is provided to automatically stop the flow of liquid into the tank when the liquid level reaches 98% capacity; or there is a means to restrict flow of liquid into a tank to a maximum flow rate of 2.5 gallons per minute when liquid in the tank reaches 95% capacity.
- The tank shape, size, or type is consistent with sound engineering design.
- The foundation is designed to minimize corrosion in any part of the tank resting on the ground.
- The tank is on foundations made of concrete, masonry, piling or steel.
- The foundation is designed to minimize the possibility of uneven settling of the tank.
- The foundation is designed to minimize corrosion in any part of the tank resting on the foundation.

continued on page 3

PTRCB Release Eligibility Criteria for Aboveground Storage Tank Facility - *continued from page 2*

Aboveground piping at a commercial facility:

- The pipes, joints, and values are required to be liquid tight.
- Any portion of the piping that is in contact with soil must be protected from corrosion in accordance with good engineering practice.
- The piping system is substantially supported and protected from physical damage and excessive stresses arising from settlement, vibration, expansion, or contraction.

Fuel dispensers at a commercial facility:

- The dispensers are mounted on a concrete island.
- The dispensers are protected against collision damage.
- A listed emergency breakaway device is installed on each hose dispensing Class I liquids.
- Each fuel dispenser has an emergency shut off device or electrical disconnection.
- The dispensing devices are bolted securely in-place.

The specific rule language (ARM 17.58.326) can be found on the web at **http://www.deq.state.mt.us/dir/legal/Chapters/CH58-03.pdf.**

Aboveground petroleum storage tank releases prior to December 17, 2004 have different requirements for eligibility and financial assistance from the fund. For assistance, please contact the board staff at (406) 841-5090.

The board is considering requiring that facilities be inspected for these requirements before eligibility to the Petroleum Tank Release Compensation fund is granted. If you want to be involved in that discussion we recommend you attend the board meetings or send your suggestions and comments to:

Executive Director, PTRCB
P. O. Box 200901
1100 N. Last Chance Gulch
Helena, MT 59620-0901

Location and times for the PTRCB meetings are published on the web site at **http://deq.mt.gov/pet/index.asp.**

At the present time the Environmental Protection Agency is requiring Spill Prevention, Control and Countermeasure rule compliance by July 1, 2009 for specific facilities. The Petroleum Tank Release Compensation Board will consider requiring a SPCC plan as a component of eligibility.

For more information on the SPCC visit EPA's web site at **www.epa.gov/oilspill.** ■

Aboveground fuel storage tank

Refresher Trainings

(Continuing Education)

October 1, 2007 • 8:00 a.m. – 5:00 p.m.
Inspector Refresher Class – Continuing Education (8 CEU credits)
Room 111 • Metcalf Building
1520 East Sixth • Helena, Montana

October 2, 2007 • 8:00 a.m. – 5:00 p.m.
Installer/remover Refresher Class – Continuing Education (8 CEU credits)
Room 111 • Metcalf Building
1520 East Sixth • Helena, Montana

October 2, 2007 • 1:00 p.m. – 5:00 p.m.
Remover Refresher Class – Continuing Education (4 CEU credits)
Room 35 • Metcalf Building
1520 East Sixth • Helena, Montana

To register, contact:
Janie Petaja at **jpetaja@mt.gov** or (406) 444-1418.

Additionally: If a sufficient number of people show an interest in becoming licensed Compliance Inspectors, the UST Program will conduct training and testing on October 23rd – 26th in Helena.

Please contact Ms. Petaja to register an interest in inspector training.

DEQ Remediation Division Changes

The DEQ Remediation Division has recently reorganized the work unit in the Hazardous Waste Site Cleanup Bureau that oversees petroleum leak sites. Because the former Petroleum Release Section was one of the largest sections in the DEQ and because it had multiple responsibilities, it has been divided into two. The new Petroleum Technical Section will continue to review and approve required investigation and cleanup work plans for leak sites that are eligible or potentially eligible for reimbursement under the Petroleum Tank Release Compensation Fund. The new LUST/Brownfields Section will be responsible for investigation and cleanups conducted under the federal LUST Trust program and will also focus on enhancing the petroleum Brownfields program. Federal Brownfields grants can be used to assess petroleum sites owned by public entities and to cleanup these sites to facilitate land use which will benefit the community. The section will also be responsible for oversight of cleanup of leaks from federally-owned USTs and at sites with tanks greater than or equal to 30,000 gallons.

Also for your information, Mike Trombetta, chief of the Hazardous Waste Cleanup Bureau, will return from his military assignment in Virginia in early October. Everyone is very thankful for his dedication and service to this country and happily welcomes him back to Helena. ■

Governor Appoints Petroleum Board Members

The governor has appointed four board members, two new and two reappointments. The two new board members are Mr. Karl Hertel and Mr. A.J. King.

Mr. Hertel of Moore was appointed to represent the insurance industry. He succeeds Shaun Peterson and will serve a 3 year term that ends June 30, 2010.

Mr. King of Kalispell will be representing the financial or banking industry with experience in small business or property loans. He will complete Mr. Frank Boucher's term which ends June 30, 2008.

The reappointments include Mr. Greg Cross of Billings who was reappointed as a representative of independent petroleum marketers and chain retailers; and Mr. Roger Noble of Kalispell who was reappointed as the representative of the petroleum release remediation consultant industry. They will both serve 3 year terms ending June 30, 2010. ■

Implementation of the Public Record Provision of the Energy Policy Act of 2005

The Energy Policy Act of 2005 requires states to maintain, update, and make available to the public records of regulated USTs. The records must include information on the number, sources and causes of releases, record of compliance, and data on the number of equipment failures. Much UST regulatory information is already available to the public on DEQ's webpage, which is maintained and updated by the Waste and Underground Tank Management Bureau.

The DEQ Remediation Division, Petroleum Release Section (PRS) will be responsible for tracking information related to the source and cause of releases. Modifications to the PRS database to record this information are in progress and are expected to be completed by October 2007, the date when states are required to start collecting this information.

PRS has updated its 30-day release report, which is sent to owners and operators with a confirmed release, to request that the source and cause of a release be recorded as part of the report. EPA guidance prescribes categories for the specific sources and causes of a release to make state reports consistent across the U.S. Categories of sources are: tank, piping, dispenser, submersible turbine pump (STP), delivery problem, and other. Categories for causes are: spill (delivery spill or spill at vehicle), overfill (tank fill pipe or nozzle shut off failure at dispenser), physical or mechanical damage, corrosion, installation problem, other, and unknown. PRS requests that as part of the investigation into the impacts of release, owners and operators or their designated agents work to identify the source and cause of the release.

This information is important to help learn how and why releases occur. Knowledge gained can then be used to update UST installation, operation and monitoring requirements. PRS will compile data on release sources and causes over the next year and make it available to the public on DEQ's webpage **www.deq.mt.gov** before December 31, 2008, as required by the Energy Policy Act. PRS will also report the information to the Petroleum Tank Release Compensation Board at their regularly scheduled meetings. ■

Surveying Monitoring Wells

The DEQ Petroleum Release Section (PRS) is in the process of updating Technical Guidance Document #2, "Licensed Surveyor Required for Determining Monitoring Well Elevations."

The new revision updates the requirement for the vertical control datum. The National Geodetic Vertical Datum of 1929 will be replaced with the North American Vertical Datum of 1988. Also, in accordance with MCA Title 37, Chapter 67, licensed professional engineers, in addition to licensed surveyors, will be authorized to conduct an initial survey of groundwater monitoring well elevations. The technical guidance document will be renamed "Surveying Monitoring Wells." The draft revised technical guidance document follows:

Technical Guidance Document #2 – "Surveying Monitoring Wells"

Many groundwater monitoring wells have been installed throughout the state for the investigation of petroleum releases from underground storage tank systems (USTs). These wells are important for determining water quality and the direction of groundwater flow. To accurately and precisely determine the direction of groundwater flow, monitoring wells must be surveyed to a common datum. This is especially important when the monitoring wells are installed in an urban area with other potential petroleum sources, or third parties that may be impacted by a release.

An initial survey of groundwater monitoring well elevations must be completed by a licensed surveyor or professional engineer registered in the state of Montana in accordance with Title 37, chapter 67, Montana Code Annotated.

The vertical control datum used to determine the elevation of the well must be the North American Vertical Datum of 1988 (NAVD 88), which should be referenced to a nearby United States Geological Survey (USGS), or equivalent, benchmark. The survey of the monitoring wells must be accurate to the Fourth Order Class A (0.10 feet x square root of total distance of level loop in miles) with a measurement precision of 0.01 feet. Deviations from this technical standard may be made on a case-by-case basis where another datum can be justified.

The Montana Department of Environmental Quality (DEQ) standard for determining latitude and longitude coordinates is the North American Datum of 1983 (NAD 83), which should also be referenced to a nearby USGS, or equivalent, benchmark. The Global Positioning System (GPS) coordinate reference used by the DEQ is the World Geodetic Survey of 1984 (WGS 84). WGS 84 is not a true coordinate system, but is referenced to NAD 83. ■

Energy Policy Act of 2005

The Energy Policy Act of 2005 requires, among other things, that operators of UST systems be trained. EPA published the guidelines for Operator Training on August 8, 2007.

The basics are:

- Each facility will need to have a Class A, Class B and Class C operator.
- Each operator must be trained and/or tested by a department-approved training program.
- The Class A operator is the individual who ensures someone is conducting the proper operation and maintenance on the UST systems.
- The Class B operator is the individual who conducts the operation and maintenance.
- Class C operators are all of the on-site individuals who may be responsible in the event of an emergency.
- A person can be in more than one operator class. For instance, an owner may be a Class A, B and C operator.

The UST Program will soon solicit the opinions of facility owners about how we might best deliver this training. If you wish for us to call on you for input, please contact Bill Rule at (406) 444-0493 or brule@mt.gov. The federal guidelines are posted on the following website:

http://www.epa.gov/oust/fedlaws/epact_05.htm#Final

Click on "Operator Training." ■

Petro-Fund Year-End Status

Fiscal year 2007 was a challenging year for the Petroleum Tank Release Compensation Fund. Revenue from the sale of gas, diesel, and aviation fuel was up slightly from fiscal year 2006 despite the significant cost increase per gallon (see table). However, due to substantial clean-up work, the claims submitted soared at an increase of over $2,000,000. The fund was able to reimburse an additional $716,000 in 2006, however, due to expenditures, the fund had to accrue $1,868,000 to be paid during fiscal year 2008. The accruals amounted to 32% of the annual funds available for claims. The excessive accrual leaves only 68% of available funds for fiscal year 2008 claims. That is only $4 million in available funds to cover what was nearly $8 million in claims last year. With such a large outstanding liability, our fund balance or net worth plummeted from a positive $503,000 in 2006 to a negative $1,868,000 in 2007. Our records indicate that there is a significant amount of corrective action activity that has been reviewed by the staff, which if conducted will put additional demand on the fund. The board is recommending that owner/operators work closely with the Remediation Division to balance limited available funding with the need for pressing corrective action at their facility.

	FY 2006	FY2007	Difference	% Change
Revenue from petroleum fuel	$6,820,875	$ 6,825,951	$ 5,076	0.07%
Payments made to claims	$5,038,781	$ 5,755,008	$ 716,227	14.21%
Accrual from outstanding claims	$ 418,620	$ 1,867,779	$ 1,449,159	346.18%
Cash at fiscal year end	$1,847,305	$ 678,264	$-1,169,041	-63.28%
Fund balance (Net Worth)	$ 502,835	$-1,867,672	$-1,364,837	-471.43%

UST Rule Amendments

The UST Rule amendments we described in last fall's MUST News became effective August 24, 2007. These rules implement the secondary containment and dispenser sump requirements of the 2005 Energy Policy Act.

The rules require that all new and replacement tanks and piping be double-walled and use interstitial monitoring for leak detection. When dispensers and connecting hardware are replaced (or newly installed), dispenser islands are modified or piping is significantly altered, dispenser sumps must be installed and monitored for releases.

These amendments also:

- Update our existing referenced standards to the most recent versions and adopt the fire code that Montana's Department of Justice switched to in 2004 (NFPA1-UFC).
- Require all past due tank registration fees be paid before the department issues an operating permit.
- Fix the wording in ARM 17.56.701 to fit the definition of "inactive" in ARM 17.56.101.
- Require that automatic line leak detectors be replaced if they cannot detect a 5.0 GPH release.
- Establish that an operating permit is valid under the old ownership for 45 days after a land transaction. This will give the old and new owner time to notify the department of the transaction so that the program can produce a valid permit in the new owner's name.
- Conduct some housekeeping:
  - Make rule definitions meet statutory definitions:
    - Installation
    - Installer
    - Person
    - Petroleum Storage Tank
    - Release
  - Cite correct statutory authority for financial responsibility in five places. The references were not updated when the citations changed in 1995.
  - Change title of 17.56.203 to 660 gallons (from 1,000 gallons)

As mentioned elsewhere in this newsletter, the department will soon need to do another round of rulewriting. It will implement the Operator Training requirements of the Energy Policy Act of 2005. ■

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Montana Department of Environmental Quality **TankHelper**

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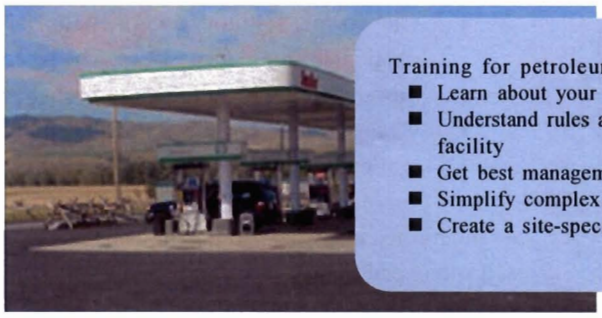

Training for petroleum system operators to:

- Learn about your petroleum equipment
- Understand rules and responsibilities for your facility
- Get best management practices
- Simplify complex regulations
- Create a site-specific management plan

tankhelper.mt.gov