

MUST News

Photo by J Finn

Department of Environmental Quality

Fall Issue 2011

Time to Clean Up: New Legislative Requirements

A House Bill 613 was legislation that came late in the 2011 legislative session. With its final passing into law this spring, the bill established benchmarks for DEQ to achieve in its petroleum release cleanup program. The bill also included funding source loss ramifications for DEQ if the benchmarks are not met. The bill outlines three specific tasks required of DEQ. These are:

- 1) closing releases is now a workload priority over the investigation of new releases unless a new release is an imminent danger to the health and safety of the public;
- 2) estimating the anticipated dates that open release sites will close (be categorized as “resolved”); and
- 3) closing 90 releases per year.

The third task, while it has an annual goal, requires DEQ to report semi-annually to the Environmental Quality Council (EQC), an interim legislative subcommittee, and to meet a benchmark of 45 releases for each six-month reporting period.

Photo by MT DEQ Remediation staff

continued on page 2

Inside This Issue

Time to Clean Up: New Legislative Requirements ...	1
State Sues BP Over Petroleum Fund	3
Landfarm Advantages	3
ARRA Stimulus Grant Funds Used to Implement Final Phase of Site Cleanup in Ronan, MT	4
Contaminated Sites to be Re-developed for Renewable Energy	5
DEQ Staffer Receives Governor’s Award for Miles City Response	6
New Kalispell Office Environmental Science Specialist	6
New Petroleum Brownfields Coordinator	7
William Bergum–New PTS Environmental Scientist	7
New Employee at Petroleum Tank Release Compensation Board	8
New Employee at DEQ’s LBS Section	8
DEQ Bureau Chief Named National Assoc. Officer	9
jUST Jargon – Bulk Plant	9
Petroleum Mixing Zones	10
Do Not Fill	11
Carroll Student Reports Exposed Pipeline	12
The Devil’s in the Details– Heeding Alarms and Warning Signs	13
Online Tank Gauging	14
Chemical Health Effects– Ethyl Dibromide (EDB) ...	15
What Do You Mean My ATG Won’t Alarm if My Tank is Leaking?!?	16
Why Does Cleanup Take So Long	17
Fund & Release Status Report	18
Save the Date	19



Underground Storage Tank Section
 1520 East Sixth Avenue • Helena, MT 59620-0901
 Phone: 406-444-5300 • Fax: 406-444-1374
 E-mail: ustprogram@mt.gov • UST Web: www.deq.mt.gov/UST
 Petroleum Technical Section • Petroleum Tank Release Compensation Board
 Leaking Underground Storage Tank (LUST)/Brownfields Section
 1100 North Last Chance Gulch • P. O. Box 200901 • Helena, MT 59620-0901
 Phone: 406-841-5016 • Fax: 406-841-5091
 Remediation Web: www.deq.mt.gov/rem

Time to Clean Up: A Legislation-required Times Estimate - *continued from page 1*

Of these three workload priorities of HB 613, this article will detail the action taken on task #2: “anticipated date of categorizing the site as resolved.” The full text of the bill required that, along with estimating the time to closure, DEQ must also prioritize the release by “danger to the health and safety of the public.” DEQ already employed a release-specific prioritization methodology based on risk to human health and the environment, so this task did not require additional staff time to accomplish. The entire task has a relatively short time frame for reporting and DEQ needs to complete it before December 31, 2011.

DEQ’s Petroleum Technical Section (PTS) started estimating time to closure for active petroleum releases in August 2011, and anticipates it will have reviewed most releases by mid-November. PTS project managers use their professional judgment, program knowledge, and regional experience to estimate the time a release would need to progress through cleanup. The time required for each release to reach cleanup goals is as unique and variable as the character of each release, its geology, and other situational variables (i.e., there is no cookie cutter approach). Each project manager has reviewed assigned releases and assessed how long a release would take to get through the investigation phase, remediation or cleanup, and monitoring. Each release is at its own stage in cleanup and not all will continue to require work in all three categories.

As of this publication date, DEQ has reviewed about 1,000 of its approximately 1,480 active releases. The illustration below shows the results of our cleanup time estimates.

To really understand the estimated time to cleanup, one must understand the two major assumptions PTS made in order to complete this task. These two assumptions are:

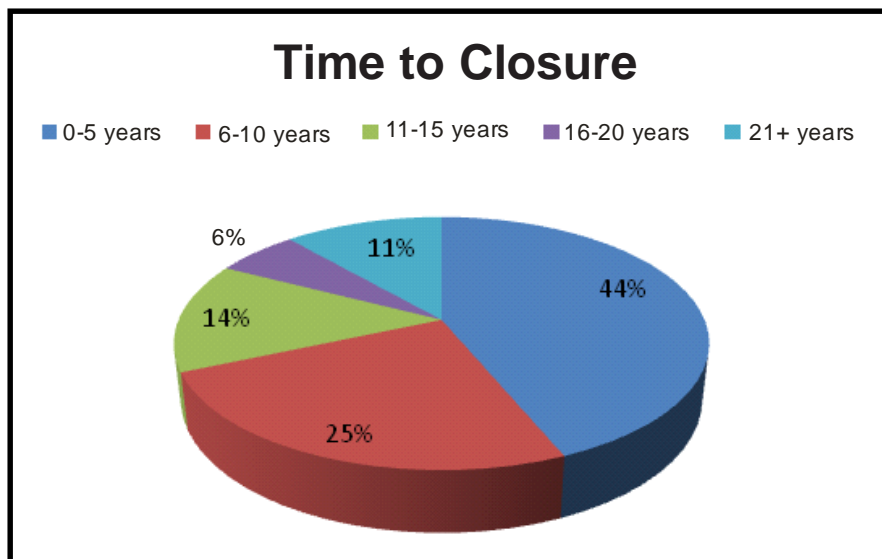
- 1) that money was not a consideration in getting a release cleaned up; and
- 2) that owners/operators (o/o) would continue from day one through closure and not let a release sit without work progressing.

Also, the estimation process is less accurate for sites that are early in the investigation process. Many more assumptions have to be made on fewer known facts when a site has not been fully investigated.

History shows that these two assumptions are not realistic. For releases that receive reimbursement from the Petroleum Tank Release Compensation Board (PTRCB), those o/o are at the whims of a finite annual budget and compete with each other for funding. Approximately 40 percent of Montana’s active releases are not eligible for fund reimbursement and typically o/o have to pay out of pocket for cleanup costs. Some of these o/o are on fixed budgets, so work progresses as personal finance allows.

Rebecca Ridenour, PTS supervisor, can be contacted with comments or questions related to DEQ’s approach at (406) 841-5059 or rridenour@mt.gov.

Next Month: Part 2: Meeting closure requirements ■





State Sues British Petroleum (BP) Over Petroleum Fund

In late October, District Judge Jeffrey Sherlock denied a motion by British Petroleum (BP) to dismiss allegations of “double dipping” in both state and insurance remediation funds.

In February 2011, a complaint was filed by the state of Montana against BP and its American subsidiaries claiming they had been “double dipping” by collecting funds from both their insurance plans and the state’s “last-resort” fund to mitigate leak damages in underground petroleum storage tanks. This fund is called the Petroleum Tank Release Cleanup Fund.

Montana’s Petroleum Tank Release Compensation Board was established in 1989 to provide funding for the cleanup and

remediation of leaking underground petroleum storage tanks at gas stations and convenience stores. This funding was to be a last measure in the event that the insurance plans of the companies that owned the tanks did not cover all the costs involved.

BP, Amoco, and ARCO are all believed to have collected hundreds of millions of dollars from the state fund, while simultaneously pulling money from their insurance plans to cover the costs of their leaking tanks. Furthermore, in the 1980s, these companies sold properties to purchasers who were not made aware of the leak history of the tanks and that they were not up to code with new federal and state regulations. ■

Landfarm Advantages

The DEQ Petroleum Technical Section (PTS) uses established procedures and technical guidance documents when approving a one-time landfarm. Landfarms are an alternative to landfill disposal of petroleum-contaminated soil. Thin layers of petroleum contaminated soil are spread out to promote degradation by sunlight, evaporation, and by microbes (bacteria and fungus) that live within the soil. An owner or operator (o/o) who proposes to use a one-time landfarm must submit application materials to LUST Brownfield Section/PTS, which in return, will issue an approval letter addressed to the landowner with guidance, requirements, and precautions included. In addition, best management practices must be employed, such as land parcel selection, use of berms or other erosion control, soil application depths, and tilling. One-time landfarms are sampled and officially “closed” when soil concentrations are below standards.

Why or how are one-time landfarms advantageous to remediation efforts? First, consider that one-time landfills are usually less expensive than disposal at commercial landfills. Landfills and commercial landfarms have tipping fees and handling and sampling requirements. In addition, trucking soil to landfills or commercial landfarms increases fuel used and operator costs.

Many petroleum releases in Montana are not located near a landfill that accepts petroleum-contaminated soil, but safe and

economical soil disposal is best done as close as possible to the release site. The distances that soils are trucked directly correlates to dollars spent at a petroleum release. Mileage can add up quickly when multiple truck-loads of contaminated soil are delivered to landfills or permitted landfarms. Using a nearby landfarm can significantly reduce miles driven and time spent. In addition to saving dollars on mileage and time, one-time landfarms offer an opportunity to be more “green” when removing soil; fewer miles driven equates to less fuel consumed and thus less greenhouse gas emissions.

Landfarming also treats and destroys the petroleum chemicals in the soil. Whether the petroleum is consumed by microbes or is photo-degraded by sunlight, it is ultimately reduced to nontoxic carbon dioxide and water. Contaminated soil disposed in a landfill remains contaminated for a very long time (forever in some cases). It is safely stored under strict regulatory requirements, but it will remain a potential risk for long into the future.

Using local parcels of property for one-time landfarms may be beneficial for cutting costs, but it also limits other environmental and health hazards such as dust, emissions, and heavy equipment traffic on the highways. Using local land parcels also keeps tax dollars circulating in the local economy and provides an economic opportunity and potential investment in the remediation effort. ■

DEQ Uses ARRA Stimulus Grant Funds to Implement Final Phase of Site Cleanup at the Former George's Conoco in Ronan, Montana



Former George's Conoco

The former George's Conoco is an abandoned petroleum service station and convenience store located along US Highway 93 South in Ronan, Montana. In April 1994, a gasoline release was reported following the removal of a perforated 16,000 gallon underground storage tank (UST). In October 1995, the Montana Department of Environmental Quality (DEQ) Leaking Underground Storage Tank (LUST) Trust Program took over the project lead when the responsible party ceased investigation and cleanup activities. DEQ initiated investigation and cleanup of the gasoline release using federal LUST Trust funds.

Between 1995 and 2002, DEQ completed several phases of investigation and cleanup. The gasoline release resulted in a 1,500 foot long, 400 foot wide, petroleum hydrocarbon plume that extends to the banks of Spring Creek, a primary receptor. In addition, MTBE, a fuel oxygenate and potential human carcinogen, and benzene, a known human carcinogen, have been detected at depths of greater than 70 feet below the ground surface. Site cleanup efforts during this time resulted in the removal of approximately 3,500 gallons of gasoline from the subsurface in the vicinity of the former UST basin; however, the fine-grained nature of the soil (primarily silt and fine-grained sand) led to a prolonged remediation time-frame using traditional remediation technologies.

In 2003, DEQ took a different approach and implemented an Electrical Resistance Heating (ERH) Pilot Demonstration Project. ERH technology works by passing an electrical current through the soil using electrodes, thus heating the subsurface soil and groundwater to temperatures sufficient to drive the contaminants into the vapor phase where they can then be removed using conventional technology such as soil vapor extraction (SVE). This demonstration project resulted in the removal of 560 gallons of gasoline over a 142-day time frame, and determined that ERH technology could be successfully implemented with air sparging and SVE on a field-scale.

Beginning in June 2007 and ending in August 2008, DEQ implemented a full-scale Phase II ERH project. The remediation system, which consisted of 48 electrodes, 41 air sparge wells, and 32 SVE wells, targeted a treatment volume of approximately 12,200 cubic yards of petroleum-contaminated soil and resulted in the removal of approximately 3,500 gallons of gasoline over a 12-month operational period.

DEQ identified the former George's Conoco as a prime candidate for additional site cleanup using American Recovery and Reinvestment Act (ARRA) grant funding based on the fact that it



*Electrical Resistance Heating Installation
continued on page 5*



DEQ Uses ARRA Stimulus Grant Funds to Implement Final Phase of Site Cleanup at the Former George's Conoco in Ronan, Montana – *continued from page 4*

was a “shovel ready,” high priority petroleum release site with significant remaining on- and off-site property impacts. Consideration was also given to the fact that proven technology and existing infrastructure were available to implement a cost-effective and successful cleanup project. Lastly, the former George's Conoco was identified for ARRA grant funding due to the fact that it is an under utilized commercial property located along a prime commercial corridor in a growing community in northwestern Montana.



Phase III ERH Installation

In February 2010, the out-of-use UST systems were removed to facilitate the third and final phase of site cleanup using ERH technology. Installation of the Phase III ERH remediation system

was initiated in early May 2010, and was completed and heating initiated on July 30, 2010. The Phase III ERH system consisted of 57 electrodes (51 new and 6 existing), 54 SVE wells (48 new and 6 existing), 57 air sparge wells, and targeted a treatment zone of approximately 14,600 cubic yards of petroleum-contaminated soil. ERH operations continued from July 30, 2010, through February 7, 2011. The average temperature within the treatment zone just prior to ERH system shutdown was over 95 degrees Celsius (203 degrees Fahrenheit). The air sparge and SVE systems continued to operate through June 30, 2011, to take advantage of the residual subsurface heat. An estimated 5,000 gallons of gasoline were removed from the subsurface during the third phase of heating, bringing the site total to approximately 12,500 gallons removed since 1995.

Although the MDT right-of-way and the agricultural field located west of the former George's Conoco remain impacted by petroleum hydrocarbons, DEQ anticipates that the dissolved-phase petroleum hydrocarbon plume will degrade relatively quickly based on the removal of source area petroleum contamination at the former George's Conoco, thus facilitating future property development along this important commercial corridor.

Groundwater monitoring will continue to ensure that the remaining dissolved-phase petroleum hydrocarbon plume continues to degrade naturally and is not threatening any potential receptors, such as structures, utility corridors, and private wells. For additional information, please contact Patrick Skibicki, DEQ LUST Brownfields Section, at (406) 841-5054 or pskibicki@mt.gov. ■

Contaminated Sites to be Redeveloped for Renewable Energy

The U.S. Environmental Protection Agency (EPA) and the Department of Energy's National Renewable Energy Laboratory (NREL) are working together to pursue the possibility of developing renewable energy on Superfund sites, brownfields, and other previously contaminated land. Twenty-six sites in 20 states, including Montana, are being considered for wind, solar, biomass or geothermal energy development.

This project is part of the RE-Powering America's Land initiative, which was developed in 2008. The goal is to create jobs and provide a boost to local economies, as well as to provide clean energy. ■

DEQ Staffer Receives Governor's Award for Miles City Response

Aaron Anderson, an Environmental Science Specialist with the Montana Department of Environmental Quality received a 2011 Governor's Award for Excellence in Performance for his response to a gasoline leak in Miles City last fall that forced the evacuation of 16 apartments and the Miles City Post Office. Aaron directed the on-site investigation and mitigation efforts of multiple subcontractors, and used superior scientific and engineering skills to plan and implement actions to restrain a rapidly expanding plume that exceeded 12,000 gallons of gasoline under multiple city blocks.

His efforts and those of numerous partners brought under control the explosion and health risks to homes and businesses. ■



AARON ANDERSON
2011 GOVERNOR'S AWARD
FOR EXCELLENCE IN PERFORMANCE

New Kalispell Office Environmental Science Specialist

This month, Reed Miner joined the Petroleum Technical Section of the Montana Department of Environmental Quality as an Environmental Science Specialist. He will work from DEQ's Kalispell office to manage petroleum release cleanup sites that are at various stages of remediation in at least 10 northwest counties.

"I'm excited to do cleanup that benefits the environment, yet is economically feasible without economic burden on owners or communities," said Reed.

Previously, Reed worked in Houston as an Environmental Consultant for Environmental Resources Management doing site investigations at oil and gas refineries. He earned Bachelor's and Master's Degrees in Geology from Brigham Young University (BYU) in Utah. One reason he moved to Montana is he missed the mountains.

Reed and his wife Annalee have three boys. Andrew is 6, Eric 4, and Logan 10 months. When Reed isn't working, he enjoys



Reed Miner

watching BYU football with his sons, and he runs. "I get my exercise by running after the boys. They keep me active."

Reed can be reached at (406) 755-8982 or rminer@mt.gov. ■



New Petroleum Brownfields Coordinator – Nick Sovner

Nick Sovner is the new Petroleum Brownfields Coordinator for the DEQ Leaking Underground Storage Tank (LUST)/Brownfields Section (LBS).

Nick will assist local governments and development groups to use brownfields funding and resources. **Brownfields** are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off green spaces and working lands.

Most recently, Sovner held a two-year position to coordinate the cleanup of projects designated for funding by the American Recovery and Reinvestment Act of 2009. He was also a Project Manager for the DEQ Petroleum Technical Section, actively



Nick Sovner

managing petroleum release cases. He's been with the DEQ for four years. Sovner can be reached at 841-5053 or nsovner@mt.gov. ■

William Bergum – New PTS Environmental Scientist

William Bergum has been working as an Environmental Science Specialist with DEQ's Petroleum Technical Section for a few months closing out tank cleanup sites and starting up new ones.

William says he enjoys working with property owners and consultants to move cleanup along. "Many of these tank sites have been around for a while and it's nice to be able to remove the contamination and restore an area to what it was before a tank release," William said.

William began his position in March 2011 and will be with DEQ through December 2012. His position is temporary and funded by an EPA Leaking Underground Storage Tank Trust (LUST Trust) grant. His focus will be on closures and low priority releases.

William is from Helena and graduated from Capital High School. In 2007, he received a Bachelor of Science degree in Mechanical Engineering from Montana State University. Later, he attended Carroll College for Environmental Engineering certification.



William Bergum

He lives in Helena, enjoys the outdoors and his two dogs. William can be reached at (406) 841-5240 or wbergum@mt.gov. ■

New Employee at Petroleum Tank Release Compensation Board

Brandon Kingsbury joins the Montana Department of Environmental Quality (DEQ) as Administrative Officer for the Petroleum Tank Release Compensation Board. His responsibilities include reviewing budgets for cleanups of petroleum tank releases, examining claims for reimbursement, and processing eligibility applications.

“I have enjoyed working in environmental regulation and look forward to my career with DEQ and serving Montana,” said Brandon.

Previously, Brandon worked for the Florida Department of Environmental Protection as an Environmental Specialist in the Submerged Lands and Environmental Resources Permitting Division. He’s lived in Fort Myers for the last 27 years, except for the many summers he spent in Helena with his grandmother.

Brandon attended Edison State College and Florida Gulf Coast University where he majored in Marine Science. He’s currently enrolled at the University of Montana pursuing a Bachelor of Science Degree in Hydrogeology.



Brandon Kingsbury

He lives in Helena with his wife Keeley. Brandon can be reached at (406) 841-5097 or bkingsbury@mt.gov. ■

New Employee at DEQ’s LBS Section

Peter Solis started in October as an Environmental Science Specialist with DEQ’s Leaking Underground Storage Tank Trust/Brownfields Section (LBS). He interned in the same section from May 2010 to May 2011, while a student at Carroll College.

Solis’s responsibilities include reviewing petroleum release sites to determine the current status of the site and whether it meets eligibility criteria for possible Petroleum Brownfields funding. “I’ll be doing status checks and making sure the groundwater at neighboring properties has not been affected,” said Solis. He’ll also evaluate any work to date and assess the need for further work.

Until he began working at DEQ he never thought about gas station leaks. He understands the need to prevent and cleanup spills. “We’re like the doctor who has to give immunizations that prevent disease. Youngsters don’t like it, but it’s the best thing for their health. What we do at DEQ is the best thing for the health of the environment.”



Peter Solis

Solis is a Colorado native and recently graduated from Carroll College with a Bachelor’s Degree in Chemistry. He lives in Helena and enjoys fly fishing, rowing boats and watching Helena Bighorns games.

Solis can be reached at (406) 841-5056 or psolis@mt.gov. ■

DEQ Bureau Chief Named National Association Officer

Ed Thamke, a Bureau Chief for the Montana Department of Environmental Quality (DEQ), was promoted to President of the Association of State & Territorial Solid Waste Management Officials (ASTSWMO) during the association's annual meeting on October 26, 2011, in Bethesda, Maryland. Thamke was elected as Vice-President at the 2010 annual meeting by voting members from 50 states, 4 territories and the District of Columbia and will now advance to President and then Past President over the next two years. Thamke has served on the ASTSWMO Board of Directors since 2005.

ASTSWMO is a non-profit association based in Washington, D.C., that drives sound public policy for state governmental programs dealing with:

- solid and hazardous waste, materials management and sustainability;
- Superfund and brownfield remedial cleanups;
- federal facilities cleanup and closure;
- petroleum storage tank leak prevention, release cleanup, and financial responsibility.

Thamke is currently the Waste & Underground Tank Management Bureau Chief with the DEQ. Prior to starting his career with the state of Montana in 1991, Thamke was Project Director for



CONGRATULATIONS
to **Ed Thamke**
for his recent promotion to **President of the**
ASSOCIATION OF STATE & TERRITORIAL SOLID WASTE
MANAGEMENT OFFICIALS (ASTSWMO)

the 1990 ASARCO East Helena Blood Lead Study and worked for Newmont Gold Corporation as an exploration geologist. Ed has degrees from Indian Hills College in Centerville, Iowa, and the University of Iowa, Iowa City, IA. ■

jUST Jargon - Bulk Plant

The term "bulk plant" is used by many industries. In the petroleum industry it generally refers to a facility with large storage tanks used to receive and distribute wholesale fuels. These facilities often include warehouses, railroad sidings, truck loading racks, and related equipment. The term "bulk terminal" is sometimes used; however the "*terminal*" more commonly refers to storage and distribution facilities associated with pipelines or waterborne tanker/barge facilities. Prior to UST regulations, underground tanks and piping were commonly found at many bulk plants in Montana. Today, much of this storage and distribution equipment has been moved above ground to facilitate simpler leak detection methods. Construction and operation of above ground bulk plants are regulated by the Fire Marshall; however, petroleum releases from bulk plants are regulated by the Department of Environmental Quality and potentially eligible for coverage under the Petroleum Tank Release Cleanup Fund.

Petroleum Mixing Zones

Senate Bill 9, signed into law April 15, 2011, allows corrective action plans to include a petroleum mixing zone (PMZ) in conjunction with the final remediation and resolution of a petroleum release. A PMZ may be included as part of the final remedial action when specific criteria are satisfied. The Department of Environmental Quality promulgated administrative rules to assist tank owners and operators to propose a PMZ for the remediation of a release and to assist the department to evaluate the proposed PMZ. The final adoption notice for these rules became effective on October 28, 2011.

Final adoption notice for the DEQ's promulgated administrative rules to assist tank owners and operators to propose a PMZ for the remediation of a release and to assist the department to evaluate the proposed PMZ became effective on October 28, 2011.

With these new laws, the department may categorize a release as resolved with a PMZ when certain conditions are met. The department must determine that conditions at the site ensure present and long-term protection of human health, safety, and the environment, and that residual petroleum in soil and groundwater will continue to clean up through natural attenuation processes without additional intervention, active cleanup, or monitoring. When sites are closed with a PMZ, the owner and operator will receive a "No Further Action" letter that describes the remaining residual contamination and conditions that must be maintained to protect human health and the environment.

The new rule, codified in ARM 17.56.607(10), addresses criteria necessary to resolve a release with a PMZ. The following requirements must be met before a release is categorized as resolved with a PMZ:

- Investigations have identified the extent or absence of contamination in the soil, groundwater, surface water, or other environmental media;
- All free product has been removed to the maximum extent practicable;
- Risk evaluations demonstrate that there are no unacceptable risks to human health, safety, ecological receptors, surface water, or aquatic sediments from exposure or likely exposure to contamination;
- All appropriate corrective actions associated with the release have been completed and no further corrective actions are reasonably required by the department;
- All applicable environmental laws associated with the release have been met, except that groundwater quality exceeds a water quality standard for petroleum or petroleum constituents;
- Groundwater monitoring indicates that the extent, magnitude, and concentration of the dissolved contaminant plume have been stable or decreasing under fluctuating hydrogeologic conditions for a period of monitoring that has been determined by the department to be sufficient to detect unacceptable risks to human health and safety;
- Source area contamination has been removed to the maximum extent practicable, and any remaining source area contamination does not pose an unacceptable present or future risk to human health, safety, or the environment;
- The downgradient boundary of the PMZ has been determined by documented investigations, and concentrations of petroleum constituents do not exceed water quality standards at the downgradient boundary of the PMZ;
- The PMZ must remain within the facility property boundary unless a recorded easement approved by the department allows the mixing zone to extend off the facility property;
- The PMZ may not extend beyond 500 feet from the origin of the release;
- The PMZ may not extend to within 500 feet of an existing drinking water well or surface water;
- A notice must be placed on the deed of the facility describing the nature and location of the residual contamination remaining in the soil and groundwater at the facility and all institutional controls, engineering controls, physical conditions, or other controls or conditions required to maintain the PMZ; and
- Department-approved institutional controls, engineering controls, or physical conditions are in place to ensure that identified risks to human health and safety have been reduced to acceptable levels. These controls and conditions may consist of:
 - ◆ Duly recorded easements, deed restrictions, or restrictive covenants that run with the land;

continued on page 11



Petroleum Mixing Zones - *continued from page 10*

- ◆ A designated, controlled groundwater area as provided for in 85-2-506, MCA;
- ◆ Environmental control easements created and approved in accordance with 76-7-101 through 76-7-213, MCA; and
- ◆ An engineering control, physical condition, or other method or condition approved by the department and designed to ensure that risk to human health has been reduced to acceptable levels.

If an owner or operator of a facility believes they have an active release that meets these criteria and they would like their facility to be resolved with a PMZ so they can receive a “No Further Action” letter, they should contact their DEQ project manager. If they do not know who their project manager is, they can call the Remediation Division’s main number at (406) 841-5000. ■

Do Not Fill

The Montana Department of Environmental Quality (DEQ) Underground Storage Tank (UST) Program uses a fuel delivery prohibition process to inform petroleum and hazardous substance delivery companies about underground tanks that cannot legally receive fuel. There are many reasons that an underground tank system should not receive fuel. The department has the authority to use delivery prohibition any time an UST has one or more significant violations, but normally reserves delivery prohibition for tank systems with a history of noncompliance problems or facilities that have egregious violations that need to be corrected before an operating permit can be issued. UST systems that are designated as inactive/ temporarily out of use (TOU) are automatically added to the “Do Not Fill” list because they are required to have less than one inch of product in them at all times. Having informed delivery companies is vital to this program working successfully in the field. DEQ keeps a “Do Not Fill” list on its web site that is used to inform delivery drivers when this rule is in effect at a site that they have an interest in. It is very helpful if owners and operators notify their delivery company which tanks cannot be filled when ordering fuel. Also, delivery personnel should consult this list any time they set out to deposit fuel into an UST system in Montana.

As many of you know, the department requires UST inspection and permitting every three years. Owners of tank systems that cannot receive fuel will get a certification from the department that designates a delivery prohibition tank as “Do Not Fill.” The department uses a unique tank tag number to associate levels of compliance with every underground tank or piping system in the

state. To find Montana’s online “Do Not Fill” list, go to <http://deq.mt.gov/UST/NonPermittedTanks.mcpx> and look at the non-permitted tank list and the UST facility operating status list.

Tanks systems that are designated “Do Not Fill” cannot be legally filled. It is a substantial violation to fill these UST systems. Remember to check the facility’s operating permit and the department’s “Do Not Fill” list before depositing fuel in any UST system. The department has issued orders of enforcement on delivery companies that deposited fuel into delivery-prohibited tanks in the past. Keeping fuel out of at-risk UST systems is an important way to minimize the possibility of a large release to the environment. The intention of delivery prohibition is to protect the environment in this way, and the process provides time for owners to come back into compliance, upgrade their equipment, correct significant violations, or decide that the effort to “save” the tank system isn’t worth it. Owners and operators always have the option to change the status of their UST system to inactive by keeping their tank empty and completing the proper department form. They may also choose to remove the system from the ground and properly close it. ■

MONTANA DISASTER AND EMERGENCY SERVICES

PHONE NUMBER

(406) 324-4777

DEQ LEAKLINE PHONE

(800) 457-0568

Carroll Student Reports Exposed Pipeline

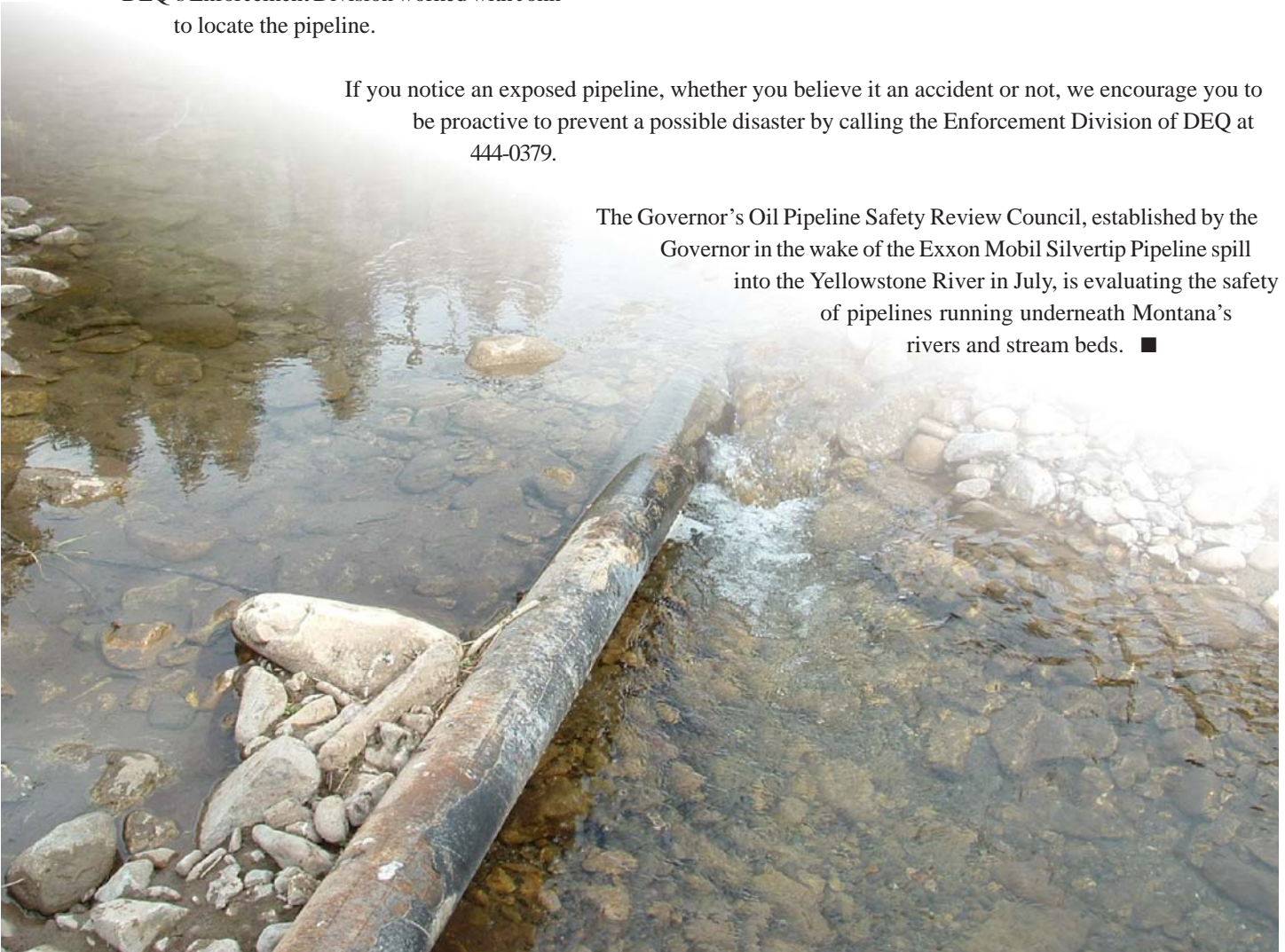
This fall, a student at Carroll College reported an exposed pipeline in Beaver Creek, north of Nelson and just downstream from the Hauser Dam. John Proulx stumbled upon the unearthed pipe this past June while in the backcountry. Beaver Creek flows into the Missouri River. During a presentation by the Montana Department of Environmental Quality (DEQ) in one of Proulx’s classes about the Yellowstone River oil spill disaster, Proulx decided to speak up. “I mentioned the exposed pipeline I had found, since I did not want what had happened to the Yellowstone River to happen at Beaver Creek and subsequently the Missouri River. Montana is just too beautiful to let something like this happen again,” Proulx said. He was also quite gratified to receive a thank you for his due diligence from Governor Brian Schweitzer recently. DEQ Enforcement Officers Tom Bovington, Chad Anderson, and Darrick Turner of DEQ’s Enforcement Division worked with John to locate the pipeline.



Exposed pipeline in Beaver Creek north of Nelson, MT

If you notice an exposed pipeline, whether you believe it an accident or not, we encourage you to be proactive to prevent a possible disaster by calling the Enforcement Division of DEQ at 444-0379.

The Governor’s Oil Pipeline Safety Review Council, established by the Governor in the wake of the Exxon Mobil Silvertip Pipeline spill into the Yellowstone River in July, is evaluating the safety of pipelines running underneath Montana’s rivers and stream beds. ■





The Devil's in the Details – Heeding Alarms and Warning Signs

This article is dedicated to those owner/operators (o/o) who diligently pay attention to the safeguards and alarms on their petroleum dispensing equipment. So often, the work of DEQ's Underground Storage Tank (UST) Section or Petroleum Technical Section (PTS) focuses on potentially harmful or inconvenient situations. DEQ PTS receives many calls and several are from o/o heeding warning signs and alarms. The aim of this article is to detail three recent situations where a crisis was averted through warning signs and quick action by o/o or their staff.

January 2011 – A sump sensor in a diesel dispenser sump and turbine sump went into alarm at the Trail Star Truck Stop in Glendive. The tank system in question was immediately shut down. Subsequently, a line test confirmed the leak. North West Fuel Systems (NWFS) obtained a permit from DEQ UST Section to remove 130 feet of double wall total containment that is leaking. The product line had to be removed in order to determine whether fuel penetrated the first wall or the outer wall.

DEQ PTS staff was on site when the product line was excavated two weeks later. There was no release of diesel from the sump to subsurface soil. There was no visible diesel-stained soil associated with the sump; the alarm and sump performed as designed; and confirmation soil samples confirmed there was no petroleum release as a result of this incident.

June 2011 – A Town Pump facility experienced a “Q2PLL2” shutdown on their midgrade gasoline pump. A staff member heeded the warning and left the midgrade gasoline shut down and contacted Montana Petroleum Services. Upon investigation, a leaking coupling connected to the turbine sump was found which resulted in 6 to 10 gallons of product released within the sump. The suspect release was resolved based on the information that the release remained within the containment system and did not impact the external environment. No doubt, a larger issue was avoided due to diligent employees.

This situation also occurred over a weekend. Town Pump followed Administrative Rules of Montana (ARM)

notification requirements by notifying DES within 24 hours, followed by a call to PTS on Monday. ARM requires notification via phone or voice-to-voice communication. The midgrade gasoline was shut down until the appropriate repairs were made.

September 2011 – While completing a daily visual inspection of the heating oil above-ground storage tank (AST) system for the Charlo School District, a staff member determined that there was a break in the piping lines. The system was immediately shut down and NWFS was contacted. While waiting for NWFS, school staff moved forward with recovering the 83 gallons of heating oil that had collected in the sump. NWFS responded by replacing the supply and return lines for the system and noted that there was no visual proof that the release had left the system. The routine daily inspection and quick action of school staff prevented a release to the environment which protected the health and wellbeing of those individuals who spend time at the school.

Kudos and thank you to those with a keen eye! ■



An Automatic Tank Gauge alarm in alarm mode.

Online Tank Gauging

The Montana Department of Environmental Quality's Underground Storage Tank (UST) Program is committed to assisting owners and operators of UST systems whenever possible. We believe it is imperative to extend an outstretched hand to the regulated community. The department used an educational approach to meet this goal in 2010. We rolled out one of the best online underground tank operator training programs available to the public anywhere:

Tankhelper II. The feedback received from other state agencies and the public on Tankhelper II has been excellent. Internet technology allows this online training program to be viewed worldwide by anyone interested in learning how to operate and manage an UST system in Montana. New developments and technologies come along from time to time in any industry, and often they change the way things are done by providing a better, faster, or more efficient way of conducting business. We feel that Tankhelper II online UST training has been very successful at achieving this for the department, and we want to continue using technological advances to assist the public in maintaining compliance in the future.

Over the last couple of years, the department became aware of a new technology called web-based fuel and compliance management systems. The department is interested in how web-based fuel management systems can assist tank operators in the future. We would like to explain how this technology could be beneficial to your business and assist you in maintaining compliance with our leak detection and prevention requirements. Web-based fuel and compliance management systems use the automatic tank gauge (ATG) that is already installed in many gas stations in Montana and turns it into an internet enabled device. The majority of underground tank facilities in Montana now have ATG systems that collect tank inventory data and conduct periodic tank tests. Tank gauges have come a long way since they were first introduced and they are superior to sticking your tank in every possible way. A tank probe does a lot of the work for you so that you can focus on other aspects of your business; this allows for better time efficiency when it comes to fuel inventory and it keeps the operator consistent with tank leak detection requirements.

Web-based fuel and compliance management technology allows the owner and/or tank operator to access your tanks inventory and compliance information from your home or office computer. This means that you don't have to drive to your store to receive

important tank information. You can assess your ATGs information from the main office, even before the store opens. This technology may provide your company with the following benefits: ability to monitor in-tank inventory in real-time; be notified automatically when an alarm occurs via e-mail or a pager; ability to clear alarms remotely; eliminates the need to keep leak test result printouts at individual stations (the records must be made available to the inspector during an inspection); and you can keep tank compliance forms on the web to print out and to provide to your compliance inspector during an UST inspection.

Information that can be accessed from web-based tank gauge systems includes the following applications: in-tank inventory, leak test results, delivery records, alarm records, sales information, delivery scheduling, and compliance forms.

A few examples of manufacturers that offer this type of service are: Purpora Engineering's MyTankGauge, Veeder-Root, and Incon.

MyTankGauge can be accessed online at www.mytankgauge.com and is not affiliated with any ATG brand.

Veeder-Root calls its remote communications software INFORM. INFORM allows an operator to monitor many different tank gauges at different locations from one central location. INFORM uses an open Microsoft Access database format to achieve its goal of providing a central "command" station for owners and operators of a large number of underground tank sites. INFORM can be accessed online at www.veeder.com/page/inform_pc_software.

Franklin Fueling Systems' Incon label offers its own internet-based program called Get Connected ANYWARE that competes in the same market as the others. This program is very similar to Veeder-Root's INFORM system and can be accessed online at www.franklinfueling.com/interactive/gca.asp.

MyTankGauge supports the following automatic tank gauge systems:

- Veeder-Root TLS-350 (all models, TLS-350R, TLS-300, etc.)
- Veeder-Root TLS-250
- Incon TS-1000, 2000, 1001, 2001
- EBW Auto-Stik II, Auto-Stick Jr., Auto-Stick Jr.-8



Online Tank Gauging - *continued from page 14*

- Omntec Consoles
- Red Jacket Consoles
- Gilbarco Consoles

Veeder-Root INFORM can communicate with the following tank gauges:

- Veeder-Root TLS-350, 300 Series, TLS-250 and TLS-2 Consoles
- EMC Series Consoles
- Legacy Red Jacket Series Consoles
- Red Jacket ProLink, ST and RLM Consoles
- INCON TS series Consoles
- EBW Consoles
- Any ATG that supports TLS-250 commands

Franklin Fueling Systems Incon Get Connected ANYWARE can communicate with the following tank gauges:

- INCON TS-5 Series (TS-3, TS-550, TS-5000)
- INCON TS-1001 Series (1001, 2001, 504, 508, 750)
- EBW Autostik (Bulkstik, Autostik Jr. (version 3.905 or greater))
- Veeder-Root TLS-300, 350 and Gilbarco EMC Automatic Tank Gauges

As you can see, almost every ATG available has the option to utilize this new technology to provide access to tank/facility information from a remote/command location. This technology may not be needed by every UST facility in Montana, but the department believes many owners and operators would be interested. Some facilities in the state are already using this technology, and many that do would not want to go without it. In summary, here are some of the benefits of web-based fuel and compliance management systems: You can lower your service costs and downtime, raise your monthly throughput, retrieve fuel management and compliance data from all your sites, eliminate reporting errors and lost leak detection printouts, schedule fuel drops more effectively, eliminate situations where you are in business with a tank sitting empty in your lot, collect alarm conditions very quickly and shutdown the necessary equipment to prevent releases, and have a centralized secure compliance information headquarters that can obtain information from multiple sites and be accessed in minutes!

If you are interested in web-based fuel and compliance management systems, the department recommends that you contact a manufacturer and work with a qualified representative to help you decide whether one of these options may be beneficial to your business. ■

Chemical Health Effects - Ethyl Dibromide (EDB); other names: Ethylene Dibromide and 1,2-Dibromoethane

HISTORY:

EDB is a gasoline additive that was used as a lead scavenger in leaded on-road gasoline from the 1920s through the 1980s and is still used in leaded aviation gasoline and racing fuels today. EDB was also used to control insects in stored products, on fruits and vegetables, in flour mills, and in soil. Because of its widespread usage throughout the United States in fuels and as an agricultural fumigant, EDB is a common contaminant in water supplies.

HEALTH EFFECTS:

The U.S. Environmental Protection Agency (EPA) considers EDB an extremely hazardous chemical. EDB is very poisonous, causes skin and mucous membrane irritation, and has been

shown to cause cancer and reproductive problems. It is a known carcinogen. In 1984, EPA stopped all agricultural uses of EDB because exposure had been found to make male workers sterile.

WATER QUALITY STANDARDS:

Due to its high toxicity, Montana set its human health standard for EDB at 0.004 micrograms per liter (ug/L). This is more than 1,200 times lower than the human health standard of 5 ug/L for benzene. ■

What Do You Mean My ATG Won't Alarm if My Tank is Leaking?!?!?

First let's define what an ATG (Automatic Tank Gauge) alarm is. An alarm would be a beeping sound, flashing red alarm light, and a display reading "Periodic Test Fail" on the LCD screen. Your ATG would look similar to this if it was in alarm mode.



Most ATG panels can be programmed to disable the alarm on a failed tank test. The test strip would still print, showing a failed tank test, but the ATG would not alarm. Therefore your ATG would look normal, like this:



There is no regulatory requirement to program an ATG to alarm on a failed test, but as an owner or operator you might want to consider making sure it does. Unfortunately, DEQ has noticed that a majority of ATGs are not programmed to alarm on a failed tank test. If the thought of your ATG not going into alarm when your tank could be leaking concerns you, contact your service provider to ensure that your ATG is programmed to alarm.

If you have any questions, please contact DEQ/UST at (406) 444-5300 or by email at ustprogram@mt.gov. ■



Why Does Cleanup Take So Long?

DEQ is often asked the question, “why does cleanup take so long?” While there are many reasons why cleanup can take a long time at contaminated sites, there are some common misconceptions and recurring themes that are worth considering.

Waiting for Data

Some misconceptions about cleanup are created by the C.S.I “crime scene” view of the world. For example, popular television leads us to believe that DNA testing is a simple procedure that can be done in hours to help identify the criminal. In reality, DNA testing is complex and can take weeks of careful and expensive laboratory work to complete. It’s not easy to catch a criminal quickly if you are waiting on DNA lab results. This bears some similarities to the typical petroleum cleanup site. Most sites go through multiple phases of assessment to determine the magnitude and severity of contamination, and multiple phases of cleanup to successfully remove the contamination. Each phase of work requires preparation by an environmental consultant and review and approval by a DEQ staff member. Each phase of work is based on results from the previous phase of work which normally involves drilling, soil and groundwater sampling, laboratory analysis, and reporting by environmental consultants. All of this takes time and few sites can be rapidly assessed and cleaned up.

Funding (or “Show Me the Money”)

Availability of funding can be a major obstacle and creates a significant delay in implementing corrective action at many sites. Montana’s Petroleum Tank Release Cleanup Fund does not generate enough money to address all the petroleum releases that are eligible for Petro Fund reimbursements. Therefore, the Petroleum Tank Release Compensation Board obligates its limited funding to address releases that pose the greatest risks to human health first. When funding is not available, owners and operators are not anxious to conduct corrective action that they must finance while waiting for reimbursement. Although some choose to address cleanup without an external cash flow from the Petro Fund, many do not, and this leads to delay of cleanup. Enforcement action may be necessary to compel reluctant owners/operators to continue with cleanup. There are many reasons why owner/operators cease cleanup at contaminated sites. Unfortunately, delay of cleanup can lead to expansion of the contaminant plume and therefore increase the length and overall cost of the project at many sites.

Site Access

Obtaining access to adjacent properties that may be impacted can be very difficult or impossible depending on cooperation from property owners. On-site access may also be restricted due to buildings, operating underground storage tank systems, or other physical obstructions. Leaking tanks are often located next to buildings or other structures that prohibit easy access during remedial investigations. Accessing these areas may require logistically challenging assessment methods (e.g., horizontal or angled borings) that are expensive. In some cases, specialized equipment must be brought in from out of state, further increasing costs. Uncertainties such as this can easily delay an environmental consultant in determining the best course of action.

Long-term petroleum releases can create pervasive contamination that eventually finds itself under buildings and into utility corridors. In some cases when contamination lies below roadways, buildings, or within utility corridors, it may make sense to delay cleanup work so it can be scheduled to coincide with reconstruction or redevelopment at the site.

Geologic/Hydrologic Considerations

No two properties have identical characteristics. Local geology and groundwater conditions may vary considerably from site to site. Sites with tight clayey soils can be extremely challenging to address. In most cases few cleanup alternatives, other than excavation, exist for these sites. If contamination is widespread, excavation may be very costly and may delay cleanup due to lack of funding. Also, Montana’s population is mostly concentrated along river systems. While most Montanans are aware of the proximity of the Clark Fork, Missouri, and Yellowstone River systems, especially when they leave their banks as rivers did during the flooding of 2011, they may not be aware of the vulnerability of shallow groundwater underlying their towns, nor the threat posed by the presence of underground and above ground petroleum storage tanks. Many towns have numerous sources of petroleum and determining which sources have caused adverse environmental impacts can be quite challenging and lead to protracted assessment and cleanup. And don’t forget that many of these sites had 50 years of spill history prior to notification to DEQ. Petroleum bulk storage facilities with long histories, clayey soils, and shallow groundwater may create “the perfect storm” leading to a protracted assessment and long-term cleanup.

continued on page 18

Why Does Cleanup Take So Long? – *continued from page 17*

Technological Limitations

Environmental consultants design remediation alternatives with site-specific considerations in mind. When choosing one or more technologies, thoughtful data evaluation must be completed to “get it right the first time.” Even state regulators acknowledge this is a tall order. Due to the very site-specific nature of the work, there truly is no remediation “cookbook.” One size does not fit all. Many of the technologies in use today only came about in the last 15 years from trial and error at cleanup sites. Designing a pilot remediation system is one way to get it right. The downside is that it takes time to design a pilot system, evaluate the results of the system, and then scale-up successful systems to properly meet the needs of the site. The worst case scenario is a site where the selected remediation alternative does not work and everyone goes back to the drawing board. Although much is learned in the effort, this results in unavoidable cleanup delay.

The Human Element

Finally there is the human element. Sometimes it takes a village to clean up a site. Lack of resources and lack of compliance with DEQ’s cleanup requests usually brings cleanup to a halt. There are many reasons why owners/operators cease work. They may all result in delay of cleanup, spread of contamination, and ultimately enforcement action being taken by DEQ or completion of cleanup activities by DEQ using the Federal Leaking Underground Storage Tank Trust (“LUST Trust”) Fund Program. The LUST Trust Program must then seek recovery of its cleanup costs

from the responsible party. One new program, the Petroleum Brownfields Program, offers a glimmer of hope for eligible sites that are bankrupt or under-utilized. Some Montana communities have successfully used Petroleum Brownfields to fund site assessment activities in the absence of a viable responsible party.

The Brave New World (or “Better, Faster, Cheaper”)

Some rapid assessment tools (e.g., GeoProbe, Membrane Interface Probe (MIP), and other approaches) have been demonstrating their success in saving time and money in the field. So there is hope that the speed of future assessment and cleanup work will increase. Technologies do exist that can completely clean up contamination even in clayey soils settings. Electrical Resistance Heating (ERH) has been successfully used in Ronan, Montana, to clean up a gas station property that may have never been cleaned up using conventional methods. While the technology is still considered innovative, it now has a proven track record for petroleum sites and may decrease in cost as the technology improves, making it more affordable for the smaller footprint of a typical gas station. Other assessment approaches and cleanup technologies continue to come online and are being used in Montana to complete petroleum cleanups “better, faster, and cheaper.” It’s in the interest of environmental consultants and the regulatory community to continue working together to utilize new technologies and find ways to increase the pace of environmental cleanups. ■

Fund and Release Status Report

Petroleum Fund Financial Status — Through end of 1st Quarter, Fiscal Year 2012

(July 1, 2011 – September 30, 2011)

Total Revenue:	\$1,358,584
Current and Prior Year Claims Expenditures:	\$1,195,088
Total Expenditures:	\$1,430,081
Outstanding Work Waiting to be Obligated:	\$1,009,071

Petroleum Releases – Through end of 1st Quarter, FY 2012

(July 1, 2011 – September 30, 2011)

New Releases:	49
Releases Resolved (Closed):	96

Summary of Total Petroleum Release Activity

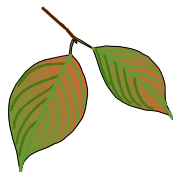
Total Confirmed Releases:	4,530
Total Active Releases:	*1,506
Total Releases Resolved (Closed):	3,024

(*NOTE: this count includes 52 sites where the lead has been transferred)

(Please note these “closed” numbers include sites that have been transferred to another program or agency.)



SAVE THE DATE



Petroleum Tank Release Compensation Board

January 23, 2012 • March 12, 2012 • May 14, 2012
July 16, 2012 • September 10, 2012 • November 19, 2012
10:00 a.m.

Montana Department of Environmental Quality
Helena (location to be determined)
1520 East Sixth Avenue • Helena, MT 59620
Contact: Terry Wadsworth • (406) 841-5092
twadsworth@mt.gov

Montana Oil Pipeline Safety Review Council

February 2012 (final date to be determined)
Montana Department of Environmental Quality
Room 111 • Lee Metcalf Building
1520 East Sixth Avenue • Helena, MT 59620
Contact: Bonnie Lovelace • (406) 444-1760 • blovelace2@mt.gov

Spring Consultants Meeting

April 13, 2012 • 10 a.m. – 12 p.m.
Montana Department of Environmental Quality
Room 122 • Last Chance Gulch Building
1100 North Last Chance Gulch • Helena, MT 59620
RSVP: Janet Sanderson • (406) 841-5005 • jsanderson2@mt.gov
Please direct questions to:
Mike Trombetta • (406) 841-5045 • mtrombetta@mt.gov
**The meeting will also be webconferenced.*

Acknowledgements to those involved in the production of the fall 2011 *MUST News*:



Contributors:


Janet Adolph
Aaron Anderson
William Bergum
Kirsten Bowers
John Brown
Shannon Cala
Caelan Colyer
Mary Ann Dunwell
Sue Fairchild
Scott Gestring

Seth Hendrix
Paul Hicks
Brandon Kingsbury
Jeff Kuhn
Redge Meierhenry
Reed Miner
Sandi Olsen
Rebecca Ridenour
Ann Root
Janet Sanderson

Patrick Skibicki
Peter Solis
Shastina Steinweden
Ed Thamke
Dalynn Townsend
Mike Trombetta
Darrick Turner
Terry Wadsworth

Production Design:
JoAnn Finn

Web Production:
Patty Davidson



MUST News is a quarterly communicational tool produced by the Montana Department of Environmental Quality to inform and update petroleum storage tank owners and operators, environmental consultants and others interested in developments about underground storage tank operation, rules, release prevention, remediation and reimbursement.

