ENVIRONMENTAL NEWS, REGULATIONS & TECHNICAL

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Atlanta Environmental Management, Inc. Newsletter

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AEM Senior Scientist, Dr. Loring Pitts

Dr. Loring Pitts is a senior scientist, and AEM vice president, with more than 30 years of experience in environmental chemistry, toxicology, and risk assessment issues. Loring is a valuable asset not only for AEM staff but, more importantly, for our clients. His wide range of experience and attention to detail are well respected by regulatory agencies and valued by our clients.

After receiving a B.S. degree in chemistry from the Georgia Institute of Technology in 1959, Loring joined the U.S. Navy, where he served until 1984. During this time he was involved with occupational health and research related to fuels, nitrate, phosphate, and glycol esters, and combustion products. His research resulted in exposure limit guidelines for naval environments. He also supervised laboratories that evaluated clinical and environmental toxicology, toxicology research, and drug screening and was responsible for the quality of results, scheduling, training, and hiring, and for management of laboratory costs. This work developed extensive experience in all forms of chromatography, spectrophotometry, mass spectrometry, immunoassays, and electrophoresis as well as statistical methods in the areas of nonparametric analysis, regression analysis, survival statistics, and multivariate analysis. In 1976, while still in the Navy, Loring received a PhD in comparative and experimental pathology from the Bowman Gray School of Medicine.

After retiring from the Navy, Loring performed data evaluations for attorneys and industry, including drug screening analysis. He later worked with several national consulting firms where he further developed industrial and chemical toxicology skills, Occupation Health and Safety, laboratory management, and data quality. He is qualified as an expert witness for toxicology and analytical chemistry and has prepared and reviewed risk assessment reports and fate and transport analyses for U.S. EPA projects across the country.

Since joining AEM, Loring has concentrated on risk assessments, statistical analyses, the analysis of complex chemical data sets, and the fate and transport of contaminants in soil and groundwater. He has prepared several Georgia HSRA Risk Reduction Standards Assessments, RBCA fate and transport analyses, and statistical analyses for RCRA groundwater monitoring programs.

U.S. EPA's National Environmental Performance Track

U.S. EPA's National Environmental Performance Track is open to facilities of all types, sizes, and complexity, public or private, manufacturing or service-oriented. Performance Track is based on the premise that government should complement existing programs with new tools and strategies that not only protect people and the environment but also capture opportunities for reducing cost and spurring technological innovation. EPA provides exclusive regulatory and administrative benefits to Performance Track members, places them at low priority for routine inspections, and offers public recognition, networking opportunities, and other benefits.

This program is designed to recognize facilities that have a sustained record of compliance and have implemented high-quality environmental management systems (EMS). Performance Track encourages facilities to continuously improve their environmental performance and to work closely with their community and employees.

Once accepted, members remain in the program for three years, as long as they continue to meet the program criteria. After three years they may reapply. Facilities applying to Performance Track, depending on size, must meet certain criteria.

Facilities must have an EMS in place for at least one completed Plan-Do-Check-Act cycle, typically a one-year time frame. An EMS is a set of policies, processes, and practices that enable a facil-

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Direct Push Technology for Groundwater Sampling

Direct push technology (DPT) refers to a wide range of tools used for subsurface investigations that are used for driving, pushing, and/or vibrating small-diameter hollow steel rods into the ground. This procedure was developed in the 1990s for the rapid characterization of geologic and waste conditions and in order to minimize the volume of waste materials generated during the investigation. Over time, this process has become widely used in the industry and further developed to allow *in situ* characterization of soil and groundwater and for installation of wells for long-term monitoring programs.

DPT methods are used to collect continuous *in situ* measurements of subsurface properties required for geotechnical, geologic, and hydrogeologic investigations and can be utilized as a cost-effective alternative to groundwater sampling. Initially, many federal and state agencies were reluctant to approve the use of this method for groundwater sampling because of uncertainty regarding the quality of samples that the technology can provide. In recent years, this technology has become more and more accepted and, in some cases, specified as the best technology. Like all technology, the use and effectiveness of this procedure is highly dependent on site-specific subsurface conditions.

Advantages and Limitations of Direct Push Technologies

Direct push technologies can be a valuable tool for environmental investigations because they can offer a number of advantages over conventional well installation and sampling methods and can provide many other types of data related to the *in situ* detection of contaminants and geotechnical data. Some of the typical advantages of using DPT over monitoring wells drilled and installed with conventional tools, such as hollow-stem augers, include:

- Faster sampling capability for collection of more data at a lower cost
- Greater variety of equipment and methods to meet project goals
- Capability of collecting depth-discrete groundwater samples
- Better vertical profiling capability for generating three-dimensional profiles
- Less investigation-derived waste and lower disposal cost

Although DPT cannot completely replace the use of conventional monitoring wells, it does provide environmental professionals with additional options for collecting groundwater samples. Conventional methods must be used in some geological environments where DPT is not suitable, such as bedrock, unconsolidated layers with significant amounts of gravel or cobbles, and waste materials containing significant obstructions. DPT is not recommended where telescoped wells are needed to prevent contaminant migration below confining layers. Conventional methods also allow deeper subsurface penetration than DPT rigs, in most geologic settings, and easier collection of large sample volumes.

Therefore, DPT and conventional monitoring well technologies may both be useful for groundwater sampling, and the specific method selected for a given geologic or hydrogeologic investigation must be designed based on site-specific conditions, data requirements, and overall cost.

DPT groundwater sampling equipment generally falls into two broad categories, as follows:

Point-in-Time Groundwater Samplers

This method uses "temporary samplers" or "grab samplers" for the rapid collection of samples to define groundwater conditions during one sampling event. These are typically less than two inches in diameter and are generally constructed of steel or stainless steel. Direct push methods are used to advance point-in-time samplers below the static water level in unconsolidated formations. Groundwater flows into the sampler from an exposed screen under ambient hydrostatic pressure and may be collected from the sampler using bailers or pumps, or the sampler may be retracted to the surface. Once sampling is completed, these devices are removed and the boring abandoned in accordance with local regulations.

DPT-Installed Groundwater Monitoring Wells

DPT monitoring wells are installed by direct push methods and permit short-term or long-term monitoring of groundwater. These wells are usually less than two inches in diameter and constructed of PVC or stainless steel. After installation, the annulus of the boring around the well casing is sealed to prevent migration of contaminants into the aquifer, and surface protection is generally required to prevent tampering with the well. A slotted or screened section permits groundwater to flow into the well under ambient hydrostatic pressure. Groundwater may be collected from monitoring wells using bailers, various pumps, or passive sampling devices.

Ideally, both DPT point-in-time and monitoring well groundwater sampling equipment should be used together to maximize their effectiveness. Point-in-time sampling techniques are generally better for the initial characterization of plume boundaries, hot spots, preferred pathways, or other monitoring points of interest. Based on this initial characterization, DPT monitoring wells or conventional monitoring wells can be optimally placed to provide the most useful monitoring data.

Use of DPT for rapid characterization at an AEM Brownfields site

U.S. EPA's National Environmental Performance Track (Cont'd from Page1)

ity to reduce its environmental impacts and increase its operating effiency. A facility must have an independent assessment of its EMS prior to acceptance to the program and every three years thereafter.

Performance Track members must have a sustained record of compliance with environmental laws and must commit to maintaining the level of compliance needed to qualify for the program. EPA has developed specific compliance screening criteria to determine eligibility for the Performance Track program.

Applicants must demonstrate past environmental achievements during the current and preceding year. Applicants also commit to four quantitative goals (small businesses commit to two goals) for improving their environmental performance.

Applicants commit to remain involved and active in their community, sharing their accomplishments with the public and addressing any community concerns. They also complete an Annual Performance Report for each year of their membership.

Performance Track offers links to programs that support potential members in completing the application process and meeting program criteria.

Emergency Procedures for Small Quantity Generators

A Small Quantity Generator, one that generates more than 100 kilograms but less than 1,000 kilograms of hazardous waste a month, may accumulate hazardous waste on site for 180 days or less without a permit or interim status. However, the generator must comply with certain requirements.

There must be at least one employee on the premises or on call (i.e., available to respond within a short period of time) who is responsible for coordinating all emergency response measures.

The generator must post information next to the telephone that includes the name and telephone number of the emergency coordinator, the location of fire extinguishers and spill control material and, if present, the fire alarm, and the telephone number of the fire department, unless the facility has a direct alarm.

The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies.

The emergency coordinator or his or her designee must respond to any emergencies that arise.

For a fire, call the fire department or attempt to extinguish the fire using a fire extinguisher.

For a spill, contain the hazardous waste to the extent possible and, as soon as is practicable, clean up the hazardous waste and any contaminated materials.

In the event of a fire, explosion, or other release that could threaten human health outside the facility, or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the National Response Center 24-hour toll free number (800-424–8802). The report must include the following information:

- Name, address, and U.S. EPA Identification Number of the generator
- Date, time, and type of incident (e.g., spill or fire)
- Quantity and type of hazardous waste involved in the incident
- Extent of injuries, if any
- Estimated quantity and disposition of recovered materials, if any

Please contact AEM if you have any questions regarding emergency procedures required under RCRA.

EPA Proposes Stronger Air Quality Standards for Lead

USEPA News Release 05/01/08

EPA is taking steps toward revising the nation's air quality standards for lead for the first time in 30 years, proposing to dramatically strengthen the standards to reflect the latest science on lead and health. "By tackling lead emissions, EPA is keeping America's clean air progress moving forward," said EPA Administrator Stephen L. Johnson. "With today's proposal, we can write the next chapter in America's clean air story."

The proposal recommends tightening the primary standard to protect public health by 80 to 93 percent. It would revise the existing standard of 1.5 micrograms per cubic meter of air to a level within the range of 0.10 to 0.30 microgram per cubic meter. The agency is taking comment on alternative levels within a range from less than 0.10 to 0.50 microgram per cubic meter.

Since 1980, emissions of lead to the air have dropped nearly 98 percent nationwide, largely the result of the agency's phase-out of lead in gasoline. Average levels of lead in the air are far below the level of the 1978 standard. Lead in the air today comes from a variety of sources, including smelters, iron and steel foundries, and general aviation gasoline. About 1,300 tons of lead is emitted to the air each year, according to EPA's most recent estimates.

Lead that is emitted into the air can be inhaled or, after it settles out of the air, can be ingested. Ingestion is the main route of human exposure. Once in the body, lead is rapidly absorbed into the bloodstream and can affect many organ systems.

More than 6,000 studies since 1990 have examined the effects of lead on health and the environment. Evidence from health studies indicates that lead in the blood can cause harm at much lower levels than previously thought. Exposure to lead is associated with a broad range of health effects, including harm to the central nervous system, cardiovascular system, kidneys, and immune system. Children are particularly vulnerable.

Exposures to low levels of lead early in life have been linked to effects on IQ, learning, memory, and behavior. Lead also can cause toxic effects in plants and can impair reproduction and growth in birds, mammals, and other organisms. EPA is proposing that the secondary standard, to protect the environment, be identical to the primary standard.

EPA will accept public comment for 60 days after the proposal is published in the Federal Register. The agency will hold two public hearings on June 12, 2008: one in St. Louis and one in Baltimore. EPA must issue a final decision on the lead standard by Sept. 15, 2008.

WE HELP SOLVE ENVIRONMENTAL AND ENGINEERING PROBLEMS! PLEASE GIVE US THE OPPORTUNITY TO WORK WITH YOU.

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ABOUT US...

AEM is a small, woman-owned business founded in 1988 by Janet T. Hart, President. Ms. Hart continues to manage day-to-day operations that have led to our significant growth since inception and our continued success in the environmental market. Although company growth is an objective, it is our philosophy that growth is secondary to client service and quality. Put simply, the company's primary loyalty is to its clients, not to the growth of the company, unless growth provides for better client service. Building strong and lasting relationships with our clients is the most important thing that we can do to achieve our goals and ensure our future success.

AEM is committed to providing high-quality, cost-effective environmental services with a primary goal of client satisfaction. One quality that sets AEM apart from the competition is the personalized service and attention given to clients—the direct response to our clients' needs in a timely manner. We continuously work to improve the quality of our services to our clients.

AEM actively supports a number of charities including Doctors Without Borders, the Humane Society of the United States, the S.P.C.A., C.A.R.E., The Smile Train, Make-A-Wish Foundation, and the Antares Foundation.

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