



2017 Geotech Field Days Presentation Abstracts

Thursday, June 22

9:00 AM – 10:30 AM

Outside

Geotech Environmental Equipment

Low Flow Sampling & Monitoring Groundwater Samples

Objectives for groundwater sampling have always been about collecting consistent, repeatable and reliable samples with as little effort as possible. Low Flow Sampling was introduced decades ago as method that achieves repeatable results, with minimal disturbance of the well and the least amount of purge water. The advantages and disadvantages of low-flow purging will be reviewed as well types of pump equipment, water level measurement, water quality monitoring, filtration, and sample collection. This presentation will demonstrate how to properly operate a bladder pump, to ensure the collection of formation water, monitor for stability and how to properly decontaminate the equipment.



9:00 AM – 10:30 AM

Conference Room

Bruker

Introduction to Portable XRF Analysis

Bruker is known worldwide as a leader in all forms of X-ray analysis equipment ranging from handheld XRF analyzers to large XRF and XRD spectrometers. A technology leader in handheld XRF analyzers, Bruker provides a range of analyzers for use in elemental analysis. Bruker's portable XRF analyzers are based on silicon drift detector (SDD) technology which will provide rapid in-situ measurement of heavy metals and other restricted materials. This capability greatly increases the speed and convenience of field work for a site remediation project. In this presentation, you will learn about the science behind Portable X-ray fluorescent (pXRF) analyzers and how they can be of benefit for environmental remediation and GEO exploration.



9:00 AM – 10:30 AM

Cafeteria

Geotech Environmental Equipment

Introduction to Choosing LNAPL - Hydrocarbon Recovery Equipment, Let's Start with the Basics

After you have characterized the contaminant plume and realized you need to do some hydrocarbon recovery, what equipment parameters do you need to know and consider prior to asking the equipment vendor for a quote? The discussion will go over these basic details needed and reasons why. Now your vendor will have a better understanding of the site conditions and limitations to work within when quoting equipment. Geotech equipment options will be presented for consideration at your project site.



Thursday, June 22

10:45 AM - 12:00 PM Noon

Outside

DECON-IT

New Biodegradable Decontamination Product for ASTM D5088-15a Decontamination

This presentation will introduce the DECON-IT product, including its technical specification, how it meets the ASTM Standard for Decontamination of Equipment, range of applications and uses, client testimonials and applied product demonstration. Free product samples will be provided to all who attend.



10:45 AM - 12:00 PM Noon

Conference Room

Geotech Environmental Equipment

Turbidity: Applications for Environmental Analysis

Turbidity is a key measure of water quality and clarity and is the cloudiness associated with suspended Solids. Both natural and man-made causes such as growth of phytoplankton, algae blooms, land disruption, dredging and runoff from industry and agriculture following heavy rains can lead to an increase in turbidity. Standards, test methods, and various technologies have been developed for determination of turbidity in drinking, effluent, ambient and groundwater.



10:45 AM - 12:00 PM Noon

Cafeteria

In-Situ

Managing Your Data in the 21st Century

This presentation will show novice and power users alike, how to leverage the versatility of the phone in your pocket and an app, to simplify and streamline instrument calibration, setup, troubleshooting, and reporting, significantly reduce post-processing of data, and virtually eliminate human error during pumping tests and groundwater sampling events. Participants will learn how a monitoring network that incorporates telemetry and cloud-based data management software can be used to effectively upload, manage, and move large and even legacy data sets into their own or a client's database, simplify the task of filtering data for important results including rapidly narrowing data by location, parameter, user tags, or project.



12:00 PM - 1:30 PM Lunch Presentation

Conference Room

Colorado Ground Water Association

Will Yeck, the far-reaching effects of wastewater injection. Recent case studies of anthropogenic earthquakes.

Anthropogenic earthquakes, primarily the result of deep fluid injection, currently contribute significantly to the overall earthquake hazard in the Central United States. While the majority of these induced earthquakes currently occur in Oklahoma, Colorado has a long record of injection induced earthquake sequences that form the basis of our broader understanding of the phenomenon. The connection between fluid injection and seismicity was first observed in the early 1960's when a series of damaging earthquakes near Denver occurred due to the injection of waste fluids at the Rocky Mountain Arsenal. Since 1991, the Bureau of Reclamation has been monitoring induced earthquakes associated with fluid injection at Paradox Valley. In 2015, Oklahoma began regional mitigation strategies aimed at reducing the volume of injected fluid. The rate of earthquakes decreased in 2016 compared to 2015, which suggests that reducing volumes can reduce the earthquake rate.



Thursday, June 22

12:00 PM - 1:30 PM Lunch Presentation

Cafeteria

Colorado Environmental Management Society

Andy Horn: Perfluoroalkyl Substance Sampling and Analysis Considerations

Perfluoroalkyl Substances (PFAS) are synthetic chemicals used in a wide variety of products. These compounds are also present in equipment used in environmental sampling efforts. Recent U.S. EPA Health Advisory Levels have been set at 70 parts-per-trillion and some states have set significantly lower regulatory requirements for allowable drinking water concentrations. The very low regulatory requirements require analysis of this common compound to levels of one to two parts-per-trillion. Concentrations at which PFAS must be analyzed and the ubiquity of these compounds require precautions. State of the practice sampling and analysis considerations will be described in this presentation.
(CLE Credits Available)



1:30 PM - 3:00 PM

Outside

AMS

Soil Sampling with Hand Tools

Soil samples tell us much about our site characterization, biological productivity, fire influences, changes due to global warming, differences in nutrient contents from one area to another.



1:30 PM - 3:00 PM

Conference Room

RAE Systems

The Advantages of Wireless Gas Detection

This will include Mesh Guard with various sensors with the EchoView controllers, ToxiRAE PRO, MicroRAE, QRAE 3, MultiRAE, UltraRAE 3000 PID, MiniRAE 3000 PID and New Area RAE 2 with up to 7 sensors plus weather for plume generation. We will demonstrate how to display on our wireless reporting software with ProRAE Guardian. Most of our entire product line can now be wirelessly displayed remotely up to several miles. We will also demonstrate the capability of the new Lone Worker with our cell phone applications operating on Android with the Apple iOS coming soon. Our full product line will be available for hands on demonstrations.



1:30 PM - 3:00 PM

Cafeteria

Geotech Environmental Equipment

Scalable Control Systems with Remote Monitoring and Solar Powered Recovery of Free-Phase Hydrocarbons

Remote, multiple site remediation systems are more feasible and efficient. Demonstrating the operation of solar panels to help power extensive groundwater remediation and to utilize ultra flexible system components with minimal variables and a safe simple solar power energy source. We will cover what information is needed before, during and after implementation, including operation and maintenance. We will outline common pitfalls to watch for to avoid timeline setbacks and budget shortfalls. An example site where successful remediation is being achieved utilizing the benefits of sipper.



Thursday, June 22nd

3:30 PM - 4:30 PM

Outside

Xylem

New Water Quality Sensor Technology

We will discuss the latest water quality sensor technologies on the market. The Main focus will be on handheld instruments that incorporate optical technology that allow highly accurate data with very minimal drift and calibration needs. The YSI ProDSS with it's Optical Dissolved Oxygen and Optical Turbidity sensors will be covered in depth. The presentation will also include the evolution of field turbidity measurements.



3:30 PM - 4:30 PM

Conference Room

INW a division of Seametrics

Sensor Installation and Maintenance Tips

Learn how to maximize the performance and life expectancy of your sensor. This session will cover general installation practices, common errors, how to maintain them while deployed, and troubleshooting tips for both groundwater well and surface water installs. Whether you're measuring pressure, conductivity, turbidity, or pH, you'll learn how to ensure your sensor is running optimally and providing you the accurate data you need from your site.



3:30 PM - 4:30 PM

Cafeteria

Ion Science

Initial Operation and Calibration of Ion Science Instruments

The basics, from opening the case, calibration to operation and using the Ion Software for the products.



Friday, June 23rd

9:00 AM - 10:30 AM

Outside

Geotech Environmental Equipment

Successful Pump Selection and Operation

What is the right pump for your application? The answer seems to be "it depends," as each type of pump technology is good for some things, but terrible for others. What is the best pump for sampling? Well development? Total fluids extraction? Water table depression? NAPL removal?

These are the questions we will address in this class, including basic function of different pump technology, energy requirements, decontamination, portability, cost considerations and how to decide which pump is best for a given site application.



Friday, June 23rd

9:00 AM – 10:30 AM

Conference Room

Geotech Computer Systems

Better Data Management for Better Site Conceptual Models

Some site remediation projects have been very successful, while many have not. A big factor in project success is effective use of site conceptual models, which, with two changes, can lead to a more positive outcome. One is to more thoroughly involve input from geologists in creating the original model. The second is to make the SCM a dynamic document, incorporating information about changes in subsurface conditions on an ongoing basis so that the best decisions can be made. This is best done by creating and maintaining a comprehensive database of the data as it is gathered, to help understand the project as it proceeds.



9:00 AM – 10:30 AM

Cafeteria

Lepton Unmanned Aircraft Systems

How to Fly Safe and Legally, UAV 101

Unmanned aircraft systems (UAS), or drones, are increasingly available online and on store shelves. Prospective operators—from consumers to businesses want to fly and fly safely, but many do not realize that, just because you can easily acquire a UAS, does not mean you can fly it anywhere, or for any purpose. This workshop will explain the requirements for flying different types of unmanned aircraft legally and safely.



10:45 AM - 12:00 PM Noon

Outside

Pace Analytical

Sampling Tips for the Field

Packing up coolers and properly filling out chains of custody are an important part to making sure any analysis runs smoothly in the lab. Many things play off of this such as proper temperatures of samples and proper analysis once received in the lab. In this presentation, we'll go over proper steps to packing a cooler of samples for shipment and how to properly fill out a chain of custody and bottle labels. We will also go over how to properly fill a 40 ml. vial in the field and will give a demonstration on a newer method for VOC air collection.



10:45 AM - 12:00 PM Noon

Conference Room

Xylem

Calibration Techniques for Field Instruments

The accuracy of the water quality data you collect is heavily dependent on how diligent you are with the calibration of your water quality sensors. YSI will conduct a training that is focused on calibration techniques and quality assurance (QA) methods to insure you are getting the best data from your water quality sensors. We will cover calibration techniques for dissolved oxygen, conductivity/salinity, pH and turbidity sensors along with metrics you can use to verify that the data collected is accurate.



Friday, June 23

10:45 AM - 12:00 PM Noon

Cafeteria

Leptron Unmanned Aircraft Systems

UAS and Sensor Technology

From hundreds of feet off the ground, sensors and payloads carried by unmanned aircraft systems (UAS) are providing a high degree of accuracy and precision for a multitude of applications ranging from surveillance to leak detection. Leptron continues to innovate aircraft design with remote sensor packages that meets growing industry demands.



12:00 PM - 1:30 PM Lunch Presentation

Cafeteria

Rocky Mountain Association of Environmental Professionals

Jennifer Strauss, Remediation Director, State of Colorado Division of Oil and Public Safety

What is This REP Stuff I Keep Hearing About?

The Colorado Division of Oil & Public Safety is now accepting applications for individuals to become a Recognized Environmental Professional (REP). The REP program will replace the Listed Consultant program on January 1, 2018. Those wishing to obtain the REP designation will need to be approved by that time. This presentation will go through the application process and will also describe what happens after an application is submitted



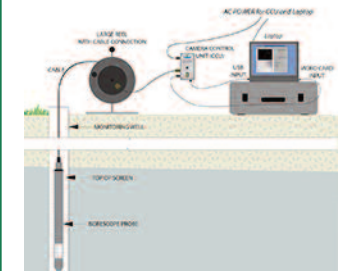
1:30 PM - 3:00 PM

Conference Room

Geotech Environmental Equipment

Characterization of Groundwater Flow

Accurately measuring groundwater flow velocity is important, particularly with the increased emphasis on subsurface transport processes at hazardous waste sites. The colloidal borescope provides a direct field measurement of the water velocity in a well. It is possible to relate flow in a well bore to the surrounding porous media. By plotting the trajectory and speed of a colloidal particle relative flow direction can be determined. The equipment for doing this type of characterization will be discussed. Equipment will be demonstrated and available for hands-on viewing.



1:30 PM - 3:00 PM

Cafeteria

Leptron Unmanned Aircraft Systems

UAS Applications: Mapping/Surveying, Inspection, and Vegetation Management

When an oil and gas company needs to carry out an inspection to its oilrig, they have to put in place a huge structure of scaffolding that can go as high as 40 floors on their offshore platforms. By using drones to do these inspections, oil and gas companies will improve workplace safety, reduce time, and inevitably save money. Drones offer the unprecedented ability to go where you could never go before, and experience perspectives never seen. Leptron will share stories about multiple projects where unmanned aircraft systems were used to improve processes, reduce safety risk, while providing data that hadn't been accessible before.

