

INTRODUCTION TO GEOPHYSICS TRAINING

VIDEO PROMO

CLIENT SCRIPT DRAFT #1

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The program opens with digitally treated shots from the class with sound-bite titles such as “I would highly recommend the course...” and “ It’s a good way to set up a class...” floating across the screen. On camera sound-bites from students and instructors then appear on screen.

Joe Rogers (student): And I've learned quite a lot and I definitely would recommend it to anybody whose interested in introductory geophysical concepts.

George Ten Eyck (Instructor): The class is going great. We have a good group of students. We have a good mix of uh people with varied backgrounds, uh people that have experience working in the field.

Kim Burch (student): Yeah, they're terrific courses and when you're, when you're out there actually gathering data you need

continual training like this to maintain your technical expertise so its really helpful.

Mike Gibbons (instructor) Any place where things are hidden, or you want to find out what the geology is, this is the course to take to see whether the techniques will work for you or not.

Shots of the students in the classroom and in the field working are shown as the narrator continues.

Narrator: The USEPA workshop, “Introduction to Environmental Geophysics” is a four-day course that provides individuals who have little or no geophysical exploration experience with practical information to effectively design and supervise geophysical surveys at hazardous materials sites.

Narrator: Students learn the latest non-destructive techniques to characterize hazardous waste sites without digging or drilling. The course focuses on geophysical plan design, the operation of geophysical equipment used for hazardous waste site characterization, procedures for safely collecting geophysical data, and the fundamentals of making simple interpretations of that data.

Mike Gibbons, of Tetra Tech NUS, one of the instructors for the course, is introduced and gives some more details about the course.

Mike: This course is essentially designed for people with very little background in geophysics. It's not really designed for geophysicists, this is designed for geologists and engineers and biologists who have responsibility for overseeing or planning site characterization or waste characterization on uncontrolled hazardous waste sites, Brownfields, or RECRA sites.

As the narrator continues to explain the course, bulleted titles are shown on-screen describing the topics discussed during the course. Shots of the students and the instructors interacting are also shown.

Narrator: At the workshop, federal, state, and local government environmental workers learn about field work plan development as well as procedures for the use of geophysical methods for field screening; procedures for collection of field data using magnetometers, seismographs, electromagnetic and resistivity instruments, ground-penetrating radar; and quality assurance considerations.

The course is conducted at an EPA Region 5 facility outside of Chicago, Illinois. During the morning, students take part in lectures, group discussions, demonstrations, and computer modeling of

data. In the afternoon students then participate in outdoor field exercises with an emphasis on the hands-on use of geophysical equipment.

Mike Gibbons returns and gives more information about the course along with the narrator and Mark Vendl of the U.S. Environmental Protection Agencies Region V Superfund Program. More shots of students and instructors working together are shown.

Mike: Over the years we found that adults learn better by doing things and less by being talked to so by breaking the class up into lecture in the morning and exercise in the afternoon; we talk about the techniques they're going to use in the afternoon in the morning, so they're cognizant of what those are, and then in the afternoon they actually get to work with the equipment and to do those techniques. And the next day we do the same thing.

Narrator: The 4 acre field exercise area has 4 simulated hazardous sites containing buried drums, pipes, conduit and other debris that could contain hazardous materials at a real site.

Mark: A very important part of the class is actually providing hands on uh use of the equipment. And so about half of the class is spent in the field at a site that we've developed where we buried uh buried metal and things like that and let students actually uh

conduct surveys and see how the instruments work and see if they can find uh these objects.

Joe Rogers, a student with the Michigan Department of Environmental Quality, Waste Management Division is introduced and talks about why he thinks the course works.

Joe Rogers: I think it works well because you get the theory in the morning and you get an understanding of the methods, and then you get out and actually get to use the equipment and I think that helps, it helps me at least in terms of learning, and in terms of actually getting your hands on the equipment and dealing with all the problems that go with field data collection that you don't really think about when you're in the classroom. So it's a good mix.

George Ten Eyck, an instructor with TetraTech NUS is introduced and gives a specific example of a technique the students are learning.

George: What we talked about in the lecture this morning was seismic refraction. Seismic is the inducing of sound waves into the ground and we measure the travel time of that sound wave through the subsurface and from that travel time we can determine depth to groundwater or depth to bedrock.

George: What we'll demonstrate this afternoon is the seismic refraction survey which is a seismic method. We induce energy into the ground. We're going to be using a sledgehammer which causes an acoustic wave to go into the ground and it bounces, it reflects off certain geologic surfaces that could be the top of groundwater, or the top of bedrock and it also refracts the energy and we measure the time that it takes that energy to flow through the ground and then we plot that out.

Mike: We only cover two techniques a day and this way they have the ability to really concentrate on those two techniques. And then as the week goes on, each technique builds on the previous one. Today, which is the third day of fieldwork, they'll be using the ground penetrating radar and some of the electro magnetic techniques to pinpoint their targets.

And last night and this morning, they worked on their target maps, or their dig maps, and then today they'll actually go in and use the highest resolution technique, which is the ground penetrating radar. We'll also be doing seismic refraction, which gives them an idea of the geology of the site.

Narrator: Students walk away from the course with a solid understanding of how to put their newfound knowledge to work everyday. It's information they can use to make their jobs more productive and efficient.

Kim Burch a student with EPA's National Enforcement Investigation and Joe Rogers returns to talk how they will use the information on the job.

Kim: There are a lot of good aspects to this course, both in terms of actually using this instrumentation in the field, which is a big part of what we do, but also the lectures are really helpful to understand the theory behind it so that we can better utilize these methods in the field.

Our division will use this kind of training to better conduct field investigations to collect evidence for enforcement investigations to determine where to dig to try to find drums or other things that have been illegally disposed on site or to conduct investigations to better get data off of the site to use later in an enforcement investigation, either civilly or criminally.

Uh, I work on a lot of uh corrective actions for the Waste Management Division so we do a lot of site investigations of which

we oversee contractors and, and sometimes do some investigations ourselves, so this is a good tool for me to be able to evaluate peoples' work plans and the quality of work that they do as well as maybe, plan some investigations of our own.

The narrator and Joe Rogers return to give some final thoughts on the course. More shots of the students and instructors interacting are shown.

Narrator: The course also better prepares students to oversee contractors, prepare budgets, specify equipment, organize schedules, and analyze reports.

Joe: You know, obviously you're not going to become an expert in a week but it's a good way to become familiar with all the different tools that are available, what their limitations and their benefits are.

Narrator: The course is open to federal, state, and local environmental agencies. For more information contact the EPA Regional Training Coordinators, visit www.trainex.org or www.ertpdu.org or call _____?

