# Table of Contents

## Soil Screeners

- What is the role of the soil screener? ............... 4
- Why is this role needed? .......................... 5

## Screener Action Items

- Pre-event ................................................... 7
- During event ........................................... 11
- Post-event ............................................... 18

## Resources ................................................. 19
Expectations

By the end of Part 4, you should be able to:

- Explain the role of the soil screener and why is it important.
- Identify action items for screeners.
- Understand how a soilSHOP event works.
- Identify proper screener station set-up.
- List the resources available for screeners.
Soil Screeners

What is the role of the soil screener?

XRF operators screen each soil sample for lead, arsenic or other heavy metals using XRF equipment. Screeners record readings in data log books or other data tracking forms, and on sample result cards or sheets that will be given to the participants.
Soil Screeners

Why is this role needed?

The soil screening process impacts the following:

1. **Overall flow of the event**
   
   The time it takes to screen a sample relates directly to how long a resident has to wait.

2. **Connecting a participant to the screening result**
   
   The record keeping, data recording, and information transfer that occurs during the soil screening process is critical to tracking a soil sample through the screening process, and delivering the results to the appropriate participant.
## Screener Action Items

### Pre-event
- Complete trainings in soilSHOP, XRF use, and safety.
- Assist with development of sample logging materials.
- Review materials needed for your station.
- Review Soil Screening Guidance and modify it to your event.
- Work with planning team to determine screener station set-up and procedures.

### During event
- Ensure safety measures are implemented, including placement of screener station away from other stations and participant traffic.
- Ensure all materials are available (XRF equipment, log books, runner station).
- Screen soil samples and log results.
- Plan for the safe and responsible management of soil sample disposal.

### Post-event
- Meet with team for follow-up actions (e.g., samples that were not screened during the event, results that were not picked up by participants, data logging/evaluation).
- Ensure XRF equipment is properly stored.
- Evaluate your station: what worked, lessons learned.
Soil Screening Material Examples:

- **Example Material List**
  - XRF Instrument(s)
  - Extension cord and power strips
  - Coolers for soil samples
  - Printed XRF Screening Process Fastsheet (aka Soil Screening Procedure)
  - Logbooks (one for each XRF)
  - Calculators to assist with averaging
  - Disposable gloves (1 box small, med, large)
  - Aluminum pans (like the ones you would serve food in)
  - Decontamination equipment
  - Paper towels
  - 1 gallon ziplock bags
  - Clipper
  - String/green twine to hang clothespins - sample number card
  - Yellow Traffic Cone to clear parking area and delineate screening area
  - Caution tape to delineate screening area

- **XRF Instrument**
  - Screen with computerized read-out
  - XRF source and detector
  - Window of XRF

Review the materials and equipment needed for your station.

Complete necessary trainings on X-Ray Fluorescence (XRF) equipment.
Log-In form provides details about the nature of the soil sample and helps soil screening team understand the results. Also helps health educator tailor health messages.

Participants take home records of their soil screening results. Remember to keep a data log for your records.
Pre-event Material Examples

Review Soil Screening Guidance Guidance on the soilSHOP website and modify it for your XRF equipment, host organization protocols, and goals.

Soil Screening Guidance Manual

Part 4 of 5
Pre-event

Tips:

- Plan ahead.
- Identify appropriate ways to dispose of soil.
- Identify follow-up procedures for samples that may not have been addressed (e.g., samples not screened due to time limits or because they need to dry).
During event

Check soil sample for bag tears and large debris (rocks or twigs). Soil should be dry.

Place sample on a stable, flat surface (e.g., table). Place XRF equipment directly on sample for 30 seconds.

Document screening results in log book or form, and on soil sample results card for health educator.

Maintain all sample package materials together throughout the process.
During event

Screener Station Set-Up:

- Keep the screening station away from participants, food, and other staff members.
- Provide trash cans, wipes, and paper towels at the station.

Screener station is identified with caution labels and items.
During event

XRF Equipment Use During soilSHOP

The XRF equipment is powerful, cost effective, and provides a rapid method for analyzing soil samples (as little as 30 seconds), while producing reliable results suitable for soilSHOP goals.
Safety Precautions When Using XRF Equipment:

- Never point the XRF at yourself or others when the primary beam lights are illuminated (x-ray on).
  
  - XRFs are a source of radiation.

- Advise women of child-bearing age of the potential damage to a developing fetus from radiation exposure.

- Follow all manufacturers’ training and instructions when handling the equipment.

- Conduct a health and safety briefing to ensure the screening area is set up properly and caution signage is visible before the event.
During event

Tips:

Use Safety Precautions
- Provide gloves and disinfecting wipes to staff
- Rope off XRF area for traffic control and safety

Stay Organized
- Use aluminum trays at the XRF station to separate pending and completed samples and label them accordingly.
During event

Event example: sample package and screening

Completed sample package example

Sample is placed on flat and stable surface, and XRF equipment is directly on soil sample for accurate reading.
During event

Event example: sample recording

Sample result card for participant and health educator to review.

Log book for record keeping.
Post-event

- Team should meet to review follow-up procedures (e.g., high levels of lead found in soil, samples that were not screened).
- Finalize plan to screen any samples that were not addressed during the event and provide participants with follow-up contact information.
- Collect log-in forms and log books and follow the team’s data management plan.
- Ensure screener station is cleaned and XRF equipment is properly stored.
- Conduct after-action meeting to identify what worked and lessons learned.
Resources

All tools are available on the soilSHOP website:

www.atsdr.cdc.gov/soilSHOP

Specific Resources:

Example Soil Screening Guidance

soilSHOP Log In Form

Example Soil Screening Result Card

Event Staff List

Email

ATSDR Regional Office
Please continue to **Part 5** of the series for information for Health Educators Training.