

Module 4: Developing a Sampling Plan

Understanding the Sampling Procedures



Communication Plan: Before you begin sampling, it is important to engage with the community and develop a plan for how to communicate throughout the sampling process.

The Who, What, and When of Sampling

Who should collect 3Ts Samples?

It is important that water samples be collected properly. Certified laboratories chosen to analyze samples may provide specialists to assist with sample collection. If the laboratory is not supplying someone to sample, be sure to identify an individual who is adequately trained to collect lead samples to help avoid sampling errors. It is useful to ask for references to confirm that individuals are qualified to test for lead in schools and child care facilities. Some state drinking water programs or public water systems may provide both services, although there is no federal requirement that they do so.

What is the recommended sample volume?

EPA recommends the use of small samples (e.g., 250-mL) because a smaller sample represents a smaller section of plumbing, which can help you to identify the sources of lead at an outlet (e.g., fixture, interior plumbing, or water entering the school). A smaller sample is also more representative of the amount of water consumed per serving.

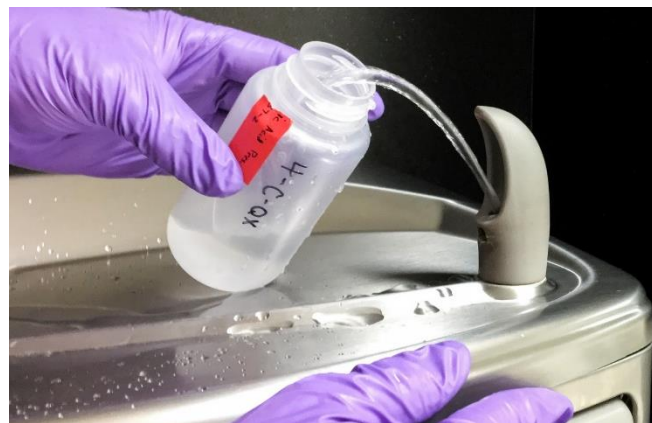
What are the recommended types of samples?

First-draw samples

First-draw samples are typically collected in the morning at outlets that are used for drinking or cooking, after the water has been sitting still the night before. Begin collecting the sample immediately after turning on the faucet or valve, not allowing any water to spill. EPA strongly recommends that schools collect first-draw samples from all fixtures used for consumption and prioritize sampling from high-risk fixtures.

Flush Samples

Flush samples are taken after water has been running from the fixture for a pre-determined length of time. These types of samples are used in Step 2 (described in the Conducting Sampling section of the 3Ts). Flush samples can be used to determine if lead is coming from the fixture itself or from interior plumbing.



Sequential samples

Sequential samples involve collecting a series of water samples at a single fixture, without flushing beforehand or running the water between samples. This sampling procedure is another method used in a Detailed Fixture Evaluation described in Appendix D, to sample multiple sections of plumbing.

When should samples be collected?

Collect all water samples *before* the facility opens and *before* any water is used. Ideally, the water should sit in the pipes unused for at least 8 hours but not more than 18 hours before a sample is taken. However, water may be more than 18 hours old at some outlets that are infrequently used. If this is typical of normal use patterns, then these outlets should still be sampled. Make sure that no water is withdrawn from the outlets prior to their sampling. Remember not to use the facilities' restrooms or sinks that morning prior to sampling.

Unless specifically directed to do so, do not collect samples in the morning after vacations, weekends or holidays because the water will have remained stagnant for too long and will not represent the water used for drinking during most of the days of the week. See [Establishing Routine Practices](#) to learn ways to improve water quality throughout the year and after long breaks.

When should I take action?

There is no safe level of lead for children. EPA encourages schools to prioritize remediation efforts based on lead sample results and to use the steps in the toolkit to pinpoint potential lead sources to reduce their lead levels to the lowest possible concentrations.

Before sampling, facilities should establish a plan on how they will respond to their sample results to protect the school and child care facility population from lead in drinking water. This may be dependent on a variety of factors (e.g., age of plumbing, population, water corrosivity, available resources, and other school and child care program priorities). EPA recommends that you prioritize remediation of drinking water outlets with the highest lead levels.

Make sure to also check with your state and local health department. They may have guidance or even requirements that include a lead remediation trigger.

Note: EPA's Lead and Copper Rule (LCR) establishes a lead action level of 15 parts per billion (ppb) for water systems and facilities that have and/or operate their water source (e.g., own their own well). If the 90th percentile lead level concentration of tap samples exceeds the 15 ppb action level, water systems must take additional actions, such as optimizing corrosion control, public education and lead service line replacement. The action level for lead is not a health-based standard and is based upon EPA's evaluation of available data on the ability of corrosion control to reduce lead levels at the tap. The action level is a screening tool for determining when certain treatment technique actions are needed.

Don't forget to maintain a record!

Recording sample information is critical to tracking and managing water quality year-over-year. Make sure to note sampling locations and sampling procedures.

