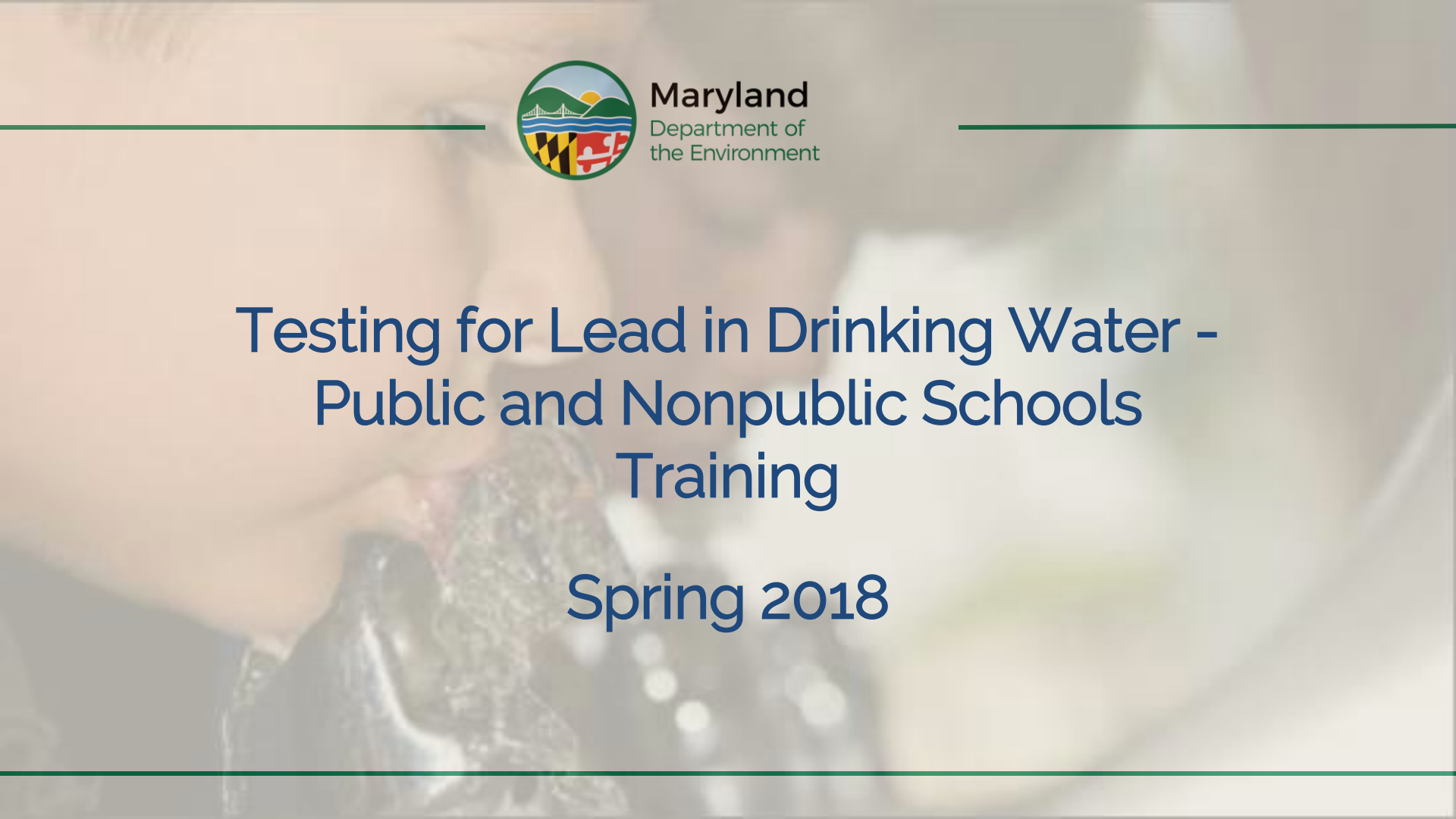


Maryland
Department of
the Environment

Testing for Lead in Drinking Water - Public and Nonpublic Schools Training

Spring 2018

Presentation Outline

1. Background
2. Overview of Testing Requirements
3. Applying for Deferrals and Waivers
4. Creating a Sampling Plan
5. Sampling Methods
6. Elevated Levels of Lead
7. Parent Notification
8. Remediation
9. Report to Governor

Background

- Maryland House Bill 270 passed during 2017 legislative session.
- Requires MDE in consultation with MSDE to adopt regulations to implement the law.
- Final regulations published in Maryland Register March 30, 2018 and became effective April 9, 2018.
- Initial testing must be completed by July 1, 2018.

Applicability

- HB270 applies to all occupied public and nonpublic schools serving children in grades Pre-K to 12 that receive drinking water from a public utility.
- HB270 does NOT apply to schools that have their own individual well(s) and are already subject to testing under the federal Lead and Copper Rule.
- HB270 does NOT apply to facilities licensed solely by the Office of Child Care (e.g. daycare centers).

Testing Requirements

- Schools must test all drinking water outlets in the school building(s) from which water is consumed or used for drink and food preparation.

- Drinking water outlets include:

✓ Drinking water fountains

✓ Kitchen sinks

✓ Classroom combination sinks

✓ Teachers' lounge sinks

✓ Nurse's Office sinks

✓ Home economics room sinks

✓ Classroom sinks in special education classrooms

✓ Ice machines and hot drink machines

✓ Any other outlet used for drinking or food preparation

Testing Requirements (cont.)

- Designated responsible person for implementing testing in accordance with the regulation
- Sampling plan
- Testing performed during regular school year while school is in session
- Sample collection performed by school personnel, laboratories, or other party (sample collector does not need to be state-certified)
- Sample analysis performed by Maryland-certified laboratory. MDE will provide a list of labs.
- Lead monitoring every 3 years
- Lead monitoring within 1 year following plumbing upgrades.

Testing Deadlines for Initial First-Draw Sample Collection

	Youngest students in grades Pre-Kindergarten - 5	Youngest students in grades 6 - 8	Youngest students in grades 9 - 12
Building constructed before 1988	July 1, 2018	July 1, 2018	July 1, 2018
Building constructed in 1988 or later	July 1, 2018	July 1, 2019	July 1, 2020
Building constructed after effective date of HB 270	Within 12 months of the date of occupancy	Within 12 months of the date of occupancy	Within 12 months of the date of occupancy

Deferrals

- Deferrals are for initial testing only. Schools will still be required to test for lead.
- Deferrals are granted on a building-by-building basis. Schools must submit an individual application for each building for which they are requesting a deferral.
- Types:

12-Month Deferral

Schools have a detailed plan in place to test all drinking water outlets.

Schools have a detailed plan of actionable steps to take if elevated levels of lead are found in any drinking water outlet.

3 -Year Deferral

All drinking water outlets in the school have previously been tested for lead.

Results of most recent testing do not show elevated levels of lead (greater than 20 ppb) in any of the drinking water outlets.

Applying for a 12-month Deferral

By the date the application is submitted, schools must have completed ALL of the following:

- A plan to identify the type, location, and unique identifying information of each drinking water outlet in the school;
- A sampling plan that uses the methods described in the regulations;
- A plan of actionable steps to take if an elevated level of lead is found in a drinking water outlet.

(MDE will provide a form)

-Deferrals will not be granted unless all of these actions are completed.

-MDE and MSDE may request these documents at any time and enter school buildings upon reasonable notice.

Testing Deadlines if Granted 12-Month Deferrals (Plan in Place)

	Youngest students in grades Pre-Kindergarten - 5	Youngest students in grades 6 - 8	Youngest students in grades 9 - 12
Building constructed before 1988	July 1, 2019	July 1, 2019	July 1, 2019
Building constructed in 1988 or later	July 1, 2019	July 1, 2020	July 1, 2021

Applying for a 3-Yr Deferral

Schools must certify that ALL of the following have been performed:

- All drinking water outlets in the school building were tested for lead.
- All samples were taken after water had been standing in plumbing for no less than 8 hours and no more than 18 hours.
- All samples were collected using the methods described in the regulation.
- All samples were analyzed at a Maryland-certified laboratory.
- All results from the most recent testing event show no elevated levels of lead.

- All results from the most recent testing event must be submitted with the application in MDE format (MDE will provide a form).

- Deferrals will not be granted unless all of the items on the checklist have been completed.

- MDE and MSDE may request these documents at any time and enter school buildings upon reasonable notice.

Testing Deadlines if Granted 3-Year Deferral (Previous Testing)

	Youngest students in grades Pre-Kindergarten - 5	Youngest students in grades 6 - 8	Youngest students in grades 9 - 12
Building constructed before 1988	July 1, 2021	July 1, 2021	July 1, 2021
Building constructed in 1988 or later	July 1, 2021	July 1, 2022	July 1, 2023

Waivers

- Waivers are granted on a building-by-building basis. A school seeking waivers for multiple buildings must submit a separate application for each building.

- A school building that is granted a waiver is indefinitely exempt from the requirements under the regulation unless it no longer meets the conditions of the waiver.

Waiver Invalidation

- A waiver may become invalid if one or more of the following occur:
    - A school building undergoes substantial plumbing upgrades/renovations;
    - The corrosivity of the public water supplied to the building changes (e.g. the addition of a new water source or a long-term change in water treatment).
- Within 30 days, a school must notify MDE if it no longer meets the conditions of the waiver. The school is subject to all requirements of the regulation.
- A school is able to re-apply for a waiver if it again meets the conditions.

Types of Waivers

Type 1

All drinking water outlets tested no earlier than 5 years before the effective date of the regulations;

AND

Every test result for every sample collected was 5 ppb or lower.

Type 2

Students in the building do not have access to piped water from any drinking water outlet;

AND

Bottled water that meets all NPDW standards is the only source of water for drinking and food preparation.

Type 3

The service line, all plumbing connecting the school to the water main, AND all interior plumbing in the school building is certified to be lead-free.

Submitting Forms

Deferral applications, waiver applications, and all other forms must be submitted to MDE.

Email: reporting.leadschoolwater@maryland.gov

Include the word "deferral" or "waiver" and name of school in email subject line

Mail: Maryland Department of the Environment
Water Supply Program
1800 Washington Blvd, Ste. 450
Baltimore, MD 21230

Fax: 410-537-3157

NOTE: All forms require a school identification number provided by MSDE. For public schools, the Public School Construction Number (PSC #) may be found at: http://www.pscp.state.md.us/fi/MainFrame.cfm

Sampling Plan

Creating a Sampling Plan

1. Obtain/make a floor plan of the school.
2. Walk through the facility to identify all outlets used for drinking and food preparation.
3. Assign a unique identification code to every outlet. Label each outlet and its ID code on the floor plan.
4. Select a laboratory for sample analysis and establish a written contract. A list of Maryland-certified laboratories will be available on MDE's Water Supply webpage.

Sample Locations

Do Collect Samples from:

✓ Kitchen sinks

✓ Drinking water fountains

✓ Classroom combination sinks (sink + drinking fountain)

✓ Teachers' lounge sinks

✓ Nurse's Office sinks

✓ Home economics room sinks

✓ Classroom sinks in special education classrooms

✓ Ice machines and hot drink machines

✓ Any other outlet used for drinking or food preparation

Do NOT Collect Samples from:

✗ Utility sinks

✗ Mop sinks

✗ Outside hose bibs, unless used for consumption

✗ Bathroom sinks, unless used for consumption

✗ Any outlet that is NOT used for drinking or food preparation

***If a water outlet is not used for consumption purposes, it must be clearly labeled with a sign (except for eyewash stations and shower heads)

Signs for Non-consumption Sites

Hand washing only

Do not use for drinking

** MDE recommends that schools include a disclaimer at the bottom of the sign indicating that the outlet has not been tested for lead, but the water is provided by a public utility that is regulated under the federal Safe Drinking Water Act.

Signage Placement

- Signs must be placed at every outlet that is not used for drinking water or food preparation if the school is not testing those outlets. Signs are not required for eyewash stations and showers.
- Signage is not acceptable for drinking water fountains.
- For banks of bathroom sinks, a sign does not need to be placed at every sink. However, signage must be visible from any sink.

Labeling Drinking Water Outlets

- School Floor Plan ID/Outlet identification code
- If a school has multiple buildings, include the building name or ID
- Type of outlet
- Location description (i.e. floor number, hallway, room number)
- If there is more than one of the same type of outlet in a location (i.e. 4 sinks in one classroom), assign a unique number to each one
- Schools are encouraged to take photos of each outlet to help with identification

Outlet Key Codes (for forms)

KS	Kitchen sink
DF	Drinking water fountain (bubbler and water cooler style)
CR	Classroom sink
BS	Bathroom sink
CS	Classroom combination sink (sink outlet)
CF	Classroom combination sink (drinking fountain outlet)
SE	Special education classroom sink
NO	Nurse’s office sink
HE	Home economics room sink
TL	Teachers’ lounge sink
IM	Ice machine
HD	Hot drink machine
OT	Other

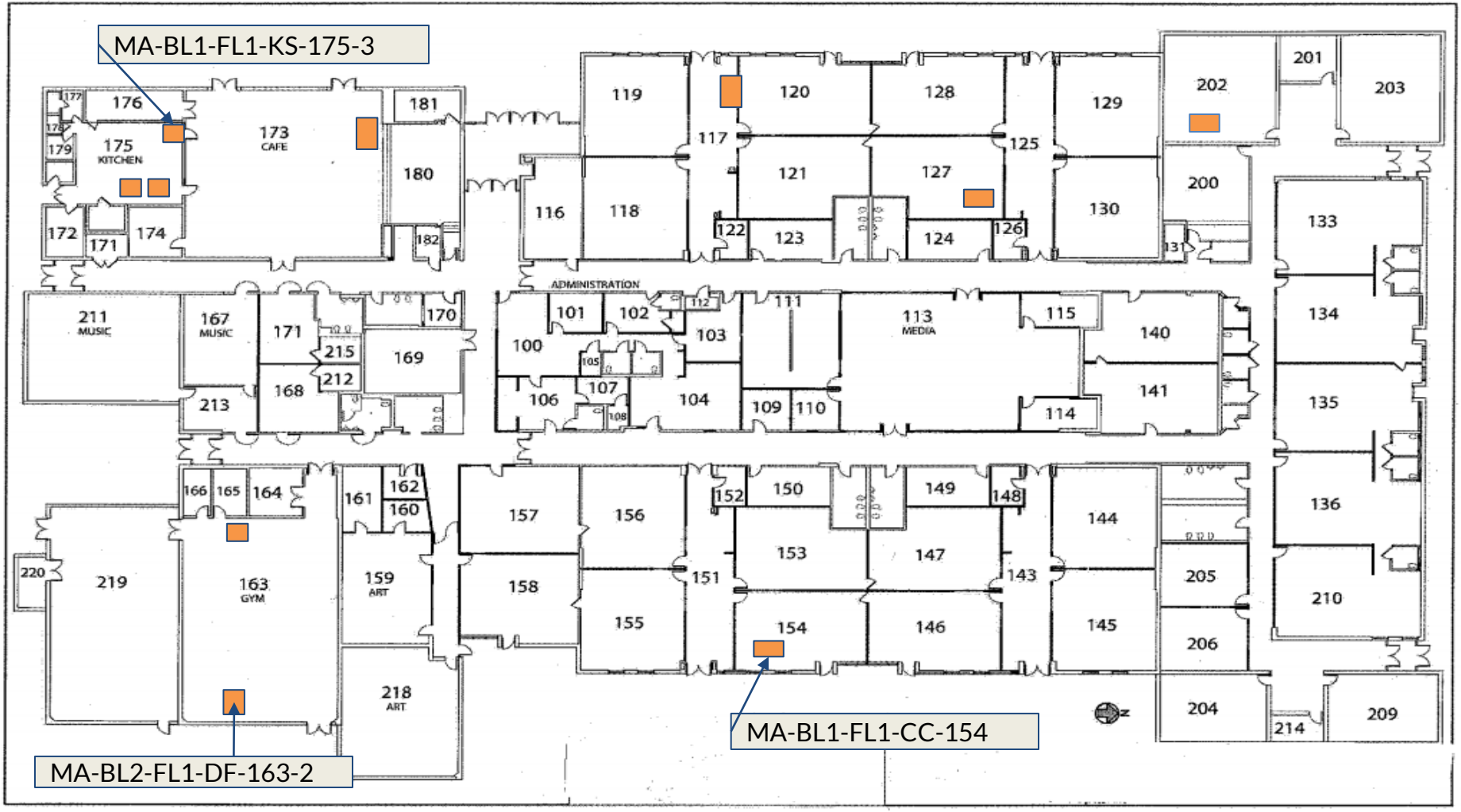
Example Outlet Identification Codes

- Monarch Academy, East Building, drinking water fountain outside Room 226 on second floor:

  MA-DF-BL2-FL2-O226

- Multiple sinks in one classroom:
  Monarch Academy, West Building, classroom sink in back left corner of Room 121:

  MA-CR-BL3-FL1-121-2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Sampling Methods

http://www.chicagotribune.com/news/local/breaking/ct-lead-testing-schools-met-20170110-story.html

Night Before/Day Of Sampling Event

- Do a walkthrough the night before the sampling event is scheduled. Make sure all outlets have been closed and no water is in use.

- Do a walkthrough the morning of the sampling event. Verify that water has been standing in the plumbing for a minimum of eight hours. If any outlets are found running water, reschedule the sampling event for a different day to ensure first-draw requirement.

Equipment

- Pre-cleaned, high-density polyethylene wide-mouth single-use 250 mL sample bottles, provided by the laboratory.
- If wearing gloves, use nitrile gloves or non-colored latex gloves.
- Safety glasses needed only if sampling bottles are pre-acidified by the laboratory (not common).
- For ice machine samples, plastic scoop recommended.

Cost-Effective Measures

- School personnel can collect lead samples and do not need to be a State-certified water sampler.

- At time of scheduling first-draw sampling with laboratory, request extra bottles from laboratory for collecting flushed samples.

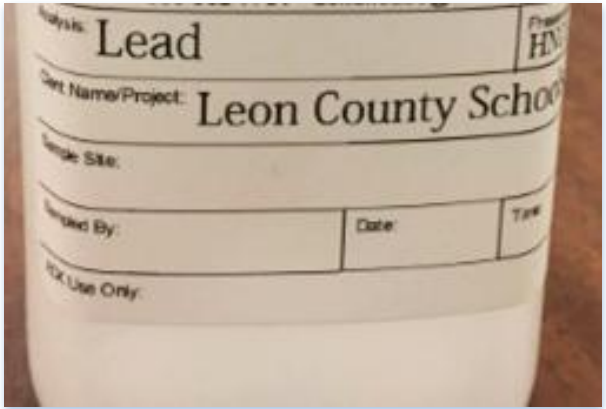
- Contact laboratories located in Maryland and outside Maryland for prices of analysis of lead samples

    - Laboratory performing analysis must be State-certified for “Metals 1”

    - Sample bottles may be mailed to laboratory

Labeling Sample Bottles

- School name
- School Floor Plan ID/Outlet ID
- Outlet Key Code
- Laboratory Sample ID, if provided
- Type of sample (first-draw or flushed)
- Date and time water last used
- Date and time sample collected
- Name and contact information of collector



https://www.tallahassee.com/story/news/2016/10/25/elevated-lead-levels-found-water-16-leon-schools/92732168/

<u>Note:</u> Use water-proof pen and do not store bottles on ice

First Draw Sampling Instructions

1. After the water has been standing in the plumbing for 8 to 18 hours, place the bottle under the cold water tap. If needed, position the bottle at an angle to capture all the flow.

2. Gently open the cold water tap directly into the bottle and fill the bottle to the neck (or line marked 250 mL). Turn on the tap at the same rate that would be used to fill a glass of water.
   - ✓ If the outlet has an aerator, leave the aerator in place.
   - ✓ If the outlet has a filter, collect the sample without the filter. If a post-filter sample is desired, collect first-draw samples on different days.
   - ✓ If a chiller serves more than one fountain, collect first-draw samples on different days from each fountain.

First Draw Sampling Instructions (cont.)

3. Tightly cap the sample bottle.

4. Review each sample bottle label to ensure that all of the information on the label is correct.

5. Fill out the Sample Collection Form and return the form with the sample bottles to the laboratory.

6. Follow all instructions for handling and submitting water samples to the laboratory. **Samples must be submitted to the laboratory within 14 days of collection for acidification.**

Do's

✓ Collect samples while school is in session

✓ Collect samples that have been sitting in the pipes at least 8 hours but no more than 18 hours

✓ When collecting samples, run water at same rate as would typically be used to fill a glass of water

✓ Only collect samples from the cold tap

✓ Collect samples first thing in the morning before students or others arrive

✓ Keep food and drink away from sampling area

Don'ts

✘ Don't collect samples in the morning after vacations, weekends or holidays

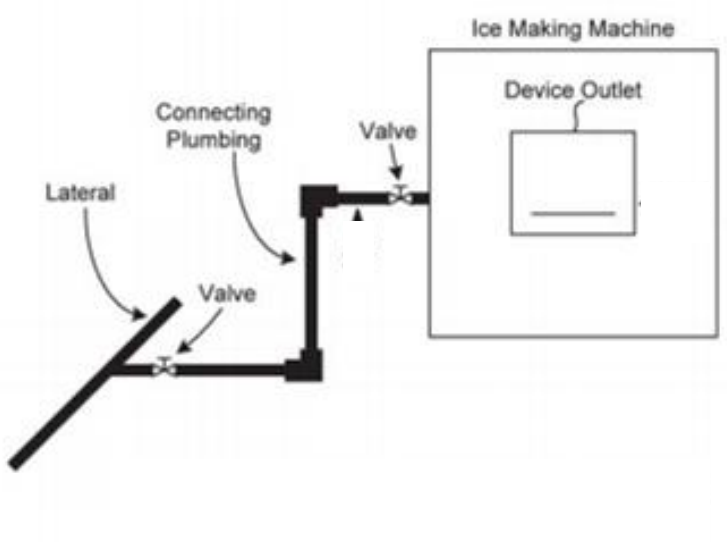
✘ Don't open sample bottles prior to collecting samples

✘ Don't touch/tamper with the interior of the sample bottles. Don't use sample bottles that have been tampered with.

✘ Don't overfill the sample bottle.

✘ Don't collect samples from ANY outlet in the building if water has been running from ANY outlet prior to sampling event. Reschedule the sampling event.

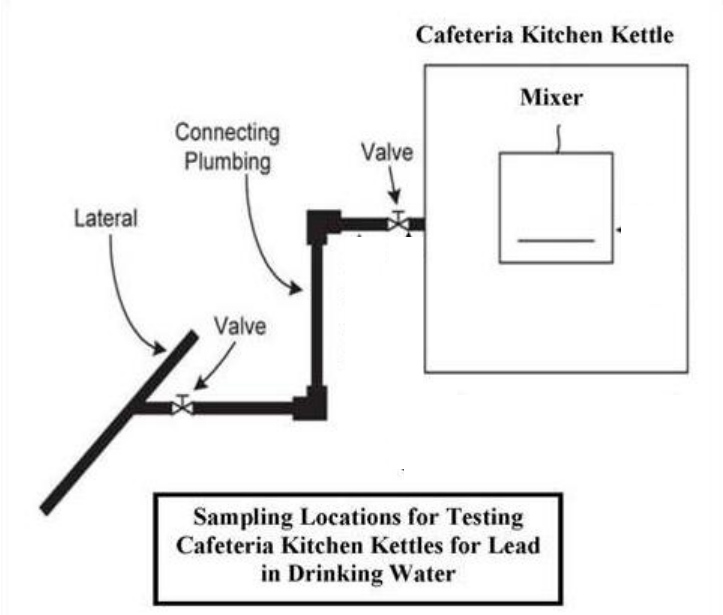
Ice Machines



EPA. (2006). 3T's for Reducing Lead in Drinking Water in Schools. https://www.epa.gov/dwreginfo/3ts-reducing-lead-drinking-water-schools-and-child-care-facilities

1. Fill 250 mL sample bottle with ice using plastic scoop or appropriate gloves.
2. Tightly cap the sample bottle.
3. Review each sample bottle label to ensure that the information contained on the label is correct.
4. Fill out the Sample Collection Form and return the form with the sample to the laboratory.
5. Follow all instructions for handling and submitting samples to the laboratory. **Samples must be submitted to the laboratory within 14 days of collection for acidification.**

Kitchen Kettles



http://www.mass.gov/eea/agencies/massdep/water/drinking/how-to-collect-a-drinking-water-sample-for-lead-and-coppe.html

1. Fill 250 mL sample bottle from the spout filling the kettle. If this cannot be done, disconnect the kettle from the plumbing. Collect a sample from the disconnected plumbing as close to the kettle as possible.

2. Tightly cap the sample bottle.

3. Review each sample bottle label to ensure that the information contained on the label is correct.

4. Fill out the Sample Collection Form and return the form with the sample to the laboratory.

5. Follow all instructions for handling and submitting samples to the laboratory. **Samples must be submitted to the laboratory within 14 days of collection for acidification.**

Reporting of Lead Sampling Results

- All sample results must be reported to MDE, MSDE and the local health department, and elevated lead sample results must be reported to MDH, within 30 days after the samples were analyzed by the laboratory or 30 days after the end of the school calendar year in which the samples were collected. MDE will provide a laboratory report form.

- School must certify that all outlets were tested in accordance with the regulation within 30 days after the end of the school calendar year in which the samples were collected. MDE will provide a certification form.

MDE: reporting.leadschoolwater@maryland.gov

MSDE: reportinglead.schoolwatermsde@maryland.gov

Local Health Department: See MDE's website for your local health department's contact information

MDH: mdh.envhealth@maryland.gov

Immediate Response to Samples with Elevated Lead Levels

For samples with results exceeding 20 ppb* of lead:

1. Close off access to outlet within 24 hours after being notified by the laboratory of an elevated level of lead;
2. Collect follow-up flushed samples from outlets with elevated lead levels within 5 days of notification by the laboratory (NOTE: If extra sample bottles are available, MDE recommends collecting flushed samples prior to shutting off outlet);
3. Ensure sufficient drinking water that meets standards in the National Primary Drinking Water regulations is available to students and staff.

NOTE: Sample result must be greater than or equal to 20.5 ppb to be considered elevated.

Flushed Sampling Procedures

1. Flushed samples may be collected at any time during the day; a member of the school staff may collect the sample. If collecting flushed samples on the same day as first-draw samples, flushed samples must ONLY be collected after ALL first-draw samples are collected.
2. Run the water for a minimum of 30 seconds or until the water temperature changes.
3. Fill the bottle to the neck or the line marked 250 mL.
    - If the outlet has an aerator, leave the aerator in place.
    - If the outlet has a filter, collect the sample without the filter.
4. For ice machines, disconnect the ice machine and collect flushed sample from closest outlet.
5. Tightly cap the sample bottle.
6. Review each sample bottle label to ensure that all of the information on the label is correct.

Flushed Sampling Procedures (cont.)

7. Fill out the Sample Collection Form and return the form with the sample bottle to the laboratory.
8. Follow all instructions for handling and submitting water samples to the laboratory. **Samples must be submitted to the laboratory within 14 days of collection for acidification.**

Flushed Sampling for “Critical” Outlets

- A critical outlet is a tap that is:
  - Essential to the daily functions of the school (e.g. Kitchen sink for cooking and washing dishes)
  - Accessible to school staff only

- MDE recommends that flushed samples be collected on the same day as first-draw samples (only after all first-draw samples from all outlets in the building are collected).

- If the results of the flushed sample from a critical outlet shows a non-elevated level of lead, MDE will allow a temporary mitigation plan of flushing the outlet daily and prior to each use to reduce lead levels until a permanent solution (e.g. fixture replacement) is implemented.

- Signs mut be posted at the outlet clearly stating that flushing for 30 seconds is required prior to each use. MDE will provide a template.

Parent Notification

Notification of Elevated Levels of Lead

- Within 10 days of receiving the laboratory report, a school must provide a written notice detailing all sample results with elevated levels of lead to parents/legal guardians, faculty, and staff

- Within 30 days of receiving the laboratory report, a school must post the written notice to the school's website.

- MDE recommends that schools provide all lead sample results. It is to the school's advantage to report all results to provide context for any elevated results.

- Within 30 days of any notification, a school must certify to MDE and MSDE that the notification has been completed. MDE will provide the report form.

Required Elements of Written Notification

- Results of the elevated lead testing and the corresponding sample sites
- Summary of federal and State Drinking water standards relative to lead
- An explanation of the health effects of lead
- Sources of human exposure to lead, including drinking water
- Immediate actions taken and next steps
- Steps consumers can take to reduce exposure to lead in drinking water
- School contact information

-MDE has developed a template for the Notice. Schools may use this template, or they may develop their own so long as it contains all of the information listed above.

Remediation

Acceptable Remedial Measures

- Signage is not an acceptable remedial measure for any outlet used for consumption
- Permanently close access to the outlet or remove the outlet
- Install and maintain a point of use filter at the outlet
- Repair, reconfigure, or replace the outlet, plumbing, or service line contributing to the elevated levels of lead
- Install and maintain automatic flushing
  - Only if testing confirms that the lead level in the outlet after flushing is not elevated
- Provide bottled water that meets the standards of the NPDW regulations
- Check grounding wires
  - If existing wires are grounded to water pipes, find alternative grounding system
- Reconfigure plumbing to bypass sources of lead contamination

Remediation Forms

- Remedial Plan of Action form:

Within 30 days of receiving laboratory results with elevated levels of lead, a school must submit its Remedial Plan of Action to MDE and MSDE.

Schools must submit a Remedial Plan of Action form for each outlet with an elevated level of lead

- Completion of Remediation form:

Within 30 days of implementation of remedial measure(s), a school must submit all actions taken and associated dates to MDE and MSDE. This information must also be posted on the school website.

Schools must submit a Completion of Remedial Actions form for each outlet that has been remediated.

Returning Outlets to Service

An outlet may only be put back into service AFTER:

1. Remedial action has been taken;
2. Follow-up first-draw sampling has been conducted. (Within 10 school days of receiving laboratory reports for follow-up first-draw sampling, a school must notify MDE and MSDE of all test results and associated dates.)
3. The outlet no longer has an elevated level of lead in the first-draw sample.

Report to Governor

Report to Governor

MDE and MSDE must submit a joint report to the Governor and Maryland General Assembly by December 1st of every year:

- The name and address of each school that has tested its drinking water for lead during the reporting period;
- The name and address of each school found to have elevated levels of lead in its drinking water;
- The type of outlet from which a drinking water sample with an elevated level of lead was collected and its location in the school building; and
- The use of each water outlet with an elevated level of lead and the levels detected.

Questions?

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Sean Kenny: sean.kenny@maryland.gov

Tim Rule: tim.rule@maryland.gov

Lan VanDe Hei: lan.vandehei@maryland.gov

Phone #: 410-537-3729

*We will also be uploading guidance materials and forms onto the Department's website mde.maryland.gov