Maryland
Department of
the Environment

Testing for Lead in Drinking Water - Public and Nonpublic Schools

CEHPAC Meeting
June 2021

Outline

1. Background
2. Testing Requirements
3. Elevated Levels of Lead
4. Parent Notification
5. Remediation
6. Funding

Background

Lead in our Environment

Sources:

- Food
- Paint (banned in 1976)

- Soil
- Dust
- Gasoline (banned in 1990)

- Drinking water

Lead in Drinking Water

- Rarely found in source water
  - Water leaving a water treatment plant in a public water system is usually lead free
  - Lead enters the drinking water through the corrosive action of the water on the lead-bearing components in the distribution plumbing
    - ➢ Depends on: - Amount and age of lead in the plumbing
      - Corrosiveness of the water
      - Amount of time the water is in contact with the plumbing
    - ➢ Lead Ban in Plumbing (1986, 1996, 2011)

Regulatory History

- Federal Safe Drinking Water Act
  - Public water systems
  - Maximum Contaminant Level (MCL) = 50 ppb (1975 – 1991)
    - Health-based standard

Regulatory History (continued)

- Federal Lead Contamination Control Act (1988)
  - Schools and child care facilities
  - List of water fountains/coolers containing lead published by the US Environmental Protection Agency (EPA)
  - Repair, remove, or replace fountains and/or test drinking water (Action Level = 20 ppb, 250 mL)
  - Established a water flushing program to reduce lead levels at the tap
    - MDE annual flushing reminder to schools
  - EPA Guidance (1989, 1994, 2005, 2006, 2018)

Regulatory History (continued)

- Federal Safe Drinking Water Act, Lead and Copper Rule (1991; Revisions 2000 & 2007)
    - Applies to public water systems (community and non-transient non-community)
    - Goal: Reduce lead and copper levels at the tap by optimizing water treatment to minimize corrosion in the public water system's distribution system (mains, service lines, and plumbing systems in buildings)
    - Changed MCL to Action Level (15 ppb, first-draw, 1000 mL, 90% of samples)
    - Samples collected from Tier 1 single-family homes (schools left out unless have own well)
    - Proposed Revsions 2019 – schools and childcare facilities testing every 5 years – EPA 3Ts

Regulatory History (continued)

- Maryland House Bill 270 (2017) - Testing for Lead in Drinking Water – Public and Nonpublic Schools
  - Requires all public, charter, and nonpublic schools serving children in pre-kindergarten through grade 12 that receive water from a public water utility to periodically test their drinking water for the presence of lead
  - Testing is coordinated by MDE in consultation with MSDE
  - Initial testing must be completed by July 1, 2018
    - Phased approach – age of students and age of school buildings
    - Technical Guidance: EPA's 3Ts Guidance
    - Action Level = 20 ppb (first-draw, 250 mL)

Regulatory History (continued)

- Maryland House Bill 1253 (2019) - Drinking Water Outlets in School Buildings – Lead Testing and Reporting Requirements and Grant Programs
    - Set a lead level of <=5 ppb as a goal for drinking water outlets in school buildings
    - Allowed monies in MD's Healthy School Facilities Fund to be used by local school systems to address lead in drinking water >5 ppb

Regulatory History (continued)

- Maryland House Bill 636 (2021) – School Buildings - Drinking Water Outlets – Elevated Level of Lead (Safe School Drinking Water Act)
  - Effective June 1, 2021: "Elevated level of lead" is lead concentration >5 ppb
  - Drinking water outlets with lead results >5 ppb but <20 ppb must be remediated by August 1, 2022

Testing Requirements

Testing Deadlines for Initial 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

Testing Requirements - Outlets

- Schools must test all drinking water outlets in the school building(s) that are used for drinking, cooking, and/or drink/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

✓ Bottle fill dispensers

✓ Any other outlet used for drinking or food/drink preparation

Signs for Non-consumption Outlets

Hand washing only

Do not use for drinking

** Schools may include a disclaimer 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.

Testing Requirements (continued)

- Testing performed during regular school year while school is in session
- Samples collected after extended period of water stagnation (8 – 18 hours)
  - "Worst-case scenario" samples
  - Does not represent normal water use patterns
- Sample analysis performed by Maryland-certified laboratory
- Lead results must be reported to MDE, MSDE, MDH, and the local health department
- Lead monitoring every 3 years (unless granted a waiver)
- Lead monitoring within 1 year following plumbing upgrades.

Summary of Testing Results – Maryland Schools

- To date, >60,000 samples have been received and validated
  - Lead AL of 20 ppb (effective through May 30, 2021)
    - <5 % of samples elevated (<2 % consumption outlets; ≈ 2 % non-consumption outlets)
  - Lead AL of 5 ppb (effective beginning June 1, 2021)
    - <15 % of samples elevated (≈ 8 % consumption outlets; <7 % non-consumption outlets)

Elevated Level of Lead in Drinking Water – Required Actions

Immediate Response to Samples with Elevated Lead Levels

For samples with results exceeding lead Action Level:

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 flush samples from outlets with elevated lead levels within 5 days of notification by the laboratory;
3. Ensure sufficient drinking water that meets the standards in the National Primary Drinking Water regulations is available to students and staff.

Critical Outlets

- A critical outlet is a tap that is:
  - Essential to the daily functions of the school (e.g., kitchen sink for cooking food)
  - Accessible to school staff only

- Flush samples are recommended to 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 first-draw sample from a critical outlet is elevated but flushed sample shows a non-elevated level of lead, 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 is allowed

- Signs must be posted at the outlet clearly stating that flushing for 30 seconds is required prior to each use

Parent Notification

Notification of Elevated Levels of Lead

- Within 10 school 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 school days of receiving the laboratory report, a school must post the written notice to the school's website

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

Written Notice

Must include:

- ✓ 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

***Schools may use MDE's template, or they may develop their own so long as it contains all of the information listed above (requires pre-approval).

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 NPDWR
- 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 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;
3. The outlet no longer has an elevated level of lead in the first-draw sample.

Funding

Funding Sources

- Testing of Lead in Drinking Water
  - Section 2107 of federal Water Infrastructure Improvements for the Nation (WIIN) Act
    - Schools and childcare facilities

- Lead Remediation in Plumbing
  - Maryland Healthy School Facility Fund
  - EPA 3T's funding sources

Questions?

Contact:

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