

Lead Testing Program

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Signature _____ Date _____

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Board Reviewed

Signature _____ Date _____
Board Chair

Lead Testing Program

Components of the Program

1. Introduction
2. Health Information
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4. Sampling Program Development (Required)
5. Conduct First Draw Tap Monitoring (Required)
6. Communicate Results (Required)
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1. Introduction

Minnesota Statutes, section 121A.335. The specific text of the statute can be found at:

- Lead in School Drinking Water (<https://revisor.mn.gov/statutes/?id=121A.335>)

Minnesota Statutes, section 121A.335 requires schools to either adopt the model plan or develop and adopt an alternative plan that accurately and efficiently tests for the presence of lead in water in public school buildings serving students.

The statute further directs that this technical guidance be based on “standards established by the United States Environmental Protection Agency (EPA)” and current Minnesota Department of Health (MDH) guidance. In addition to describing required aspects (planning, testing, reporting), the manual also presents flexible guidance that schools can consider to meet their individual needs most efficiently.

The Minnesota Department of Education (MDE) and MDH intend that school administrators consult this technical guidance and model plan when testing for lead in their drinking water and implement activities as needed to reduce exposure to lead. The school district is responsible for adopting and retaining the model plan/alternative plan and test results records, as well as making those results available to parents and the public. School administrators, school boards and others in positions of governance should review this guidance.

For the purposes of this program Southern Plains Education Cooperative will be following the guidance set forth by MDE's model plan on lead to meet the requirements put in place by Minnesota Statute 121A.335.

Beyond the model plan for lead testing, this technical guidance includes recommendations to reduce lead levels at taps used for drinking water and food preparation. The instructions for testing and suggested lead hazard reduction options are designed for school health, safety, and maintenance personnel, as well as consultants working with educational agencies. If your school is served by a Community Public Water System (CPWS), i.e. municipality, you should contact your CPWS to learn more about lead in your water supply before testing your facility. It's important to develop a working relationship with your CPWS, including having a coordinated communications plan.

2. Health Information

Why Worry About Lead in Schools?

Lead is a toxic material known to be harmful to human health if ingested or inhaled. Recent research has shown that exposure to lead is associated with adverse mental, physical, and behavioral effects on children. The current scientific consensus is that there is no safe level of lead exposure.

For more background, see:

- Centers for Disease Control and Prevention (<https://www.cdc.gov/nceh/lead/>)

Therefore, any measurable blood lead level can have negative health effects. While water is just one potential source of exposure to lead in the environment, reducing lead in school drinking water can decrease an individual's overall exposure to lead. While we have known that lead is toxic for many centuries, there has historically been a level of exposure presumed to be "safe." Over the years, the safe level has been reduced based on new research, but it was always there.

However, in 2012, the Centers for Disease Control and Prevention dramatically changed the way lead toxicity is assessed. Instead of setting a safe level, the new approach acknowledges the fact that there is no currently known safe level of lead exposure and recommends a primary prevention approach (i.e., preventing a problem before it occurs) to reducing risk. This concept of "no safe level" is similar to the way we assess risks from carcinogens. Health risks from carcinogens are managed by setting an acceptable risk probability (not zero) that balances the need to reduce exposure with the

practicality of avoiding chemicals that are widely distributed in our environment. The new approach for lead hazard reduction is similar in that it balances the need to reduce exposure (i.e., primary prevention) while recognizing that lead is still present in many areas of our environment.

How Does Lead Get into Drinking Water?

Lead found in drinking water comes primarily from materials and components associated with the water distribution system and plumbing. While public water distribution systems may have lead components, the highest concentrations of lead are typically found nearest to the tap. Lead may be present in various materials in a building's plumbing system such as lead solder, brass fixtures, valves, and lead pipes. Corrosion of these materials allows lead to dissolve into the water passing through the plumbing system. The amount of corrosion depends on the type of plumbing materials, water quality characteristics, electrical currents, and how water is used. The longer water remains in contact with lead materials, the greater the chance lead can get into the water.

What Can Be Done to Reduce Lead Levels in Drinking Water?

This section is relevant to any tap used for drinking water or food preparation. These are best practices in reducing lead concentrations and can be used at home, school, or at work. When evaluating the best approach for protecting against lead exposure in schools, it is important to balance a number of factors:

- Current research has not identified a safe level of exposure to lead;
- Lead is still present in many areas of the environment, making it very difficult to eliminate all exposure;
- The risks of developing irreparable damage from lead in water increase with higher concentrations of lead and longer exposure times;
- School buildings across the state are very different, being old/new, big/small, busy/limited, targeted/multi-purpose, which impacts the likelihood of lead exposure; and
- Local schools have the best understanding of their buildings and how they are used; they can work with parents, students, teachers, and administrators to come up with the best approach for their specific situation.

An effective response to lead in water must consider all of the factors listed above. Both MDE and MDH are readily available for technical assistance and consultation, but the local school district or cooperative is in the best position to understand and implement an effective strategy for their specific situation.

Use only cold water for drinking and food preparation Use only cold water for drinking, preparing food, and making baby formula. Hot water releases more lead from pipes than cold water. The water may be warmed before use in formula. Let it run before use

Running water at a tap, prior to using it for drinking or food preparation, will typically help reduce lead levels in the water. This works by removing the water that has been in the longest contact with the plumbing materials, thus removing the water with the highest concentration of lead. Let the water run for 30-60 seconds before using it for drinking or cooking if the water has not been turned on in over six hours.

The only way to know if lead has been reduced after letting it run is to check with a test.

Other routine maintenance

Like any appliance, water systems require routine maintenance to function properly. Steps to help reduce the presence of lead in your water include:

- Clean faucet aerators on a quarterly basis - more often if debris buildup is observed - as lead-containing materials may accumulate in aerator screens;
- Use only certified lead free materials when performing plumbing work.

Lead Free Certification Marks

(<http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100GRDZ.txt>); and

- Follow the manufacturer's recommendations for water softener settings to ensure an appropriate level of hardness. The hardness of the incoming water may have to be determined by asking your water supplier or having a sample analyzed.

Test the water for lead

The only way to determine how much lead may be present in drinking water is to have the water tested. Each tap or fixture providing water for drinking or food preparation should be tested at least every five years. Some form of lead hazard reduction should be implemented for taps where lead is found. Detailed instructions on testing water for lead and recommended lead hazard reduction options can be found later in this plan.

3. Regulations and Guidance

Due to lead's health effects and the special circumstances that make lead a concern in schools, a number of legal requirements and guidance materials exist that are applicable to reducing lead in school drinking water.

The plan you are reading was developed in response to Minnesota State Statute 121A.335. It requires public and charter schools to have a plan for efficiently and accurately testing for lead in drinking water using the model plan developed by MDE and MDH. The law applies in addition to any other current testing requirements. The full Statute is found at: (<https://revisor.mn.gov/statutes/?id=121A.335>)

Under the statute, school districts must:

- Adopt the model plan from this document or develop and adopt an alternative plan to accurately and efficiently test for lead in school buildings serving students from prekindergarten to grade 12;
- Create a schedule for testing that includes all school district buildings and charter schools serving students where there is a source of water that may be consumed by students (used in cooking or directly by drinking). Each tap must be tested at least once every five years.; and
- Make the results of testing available to the public to review and notify the parents and guardians of the availability of the information.

MDH Guidance in 1989, MDH developed its first guidance document addressing lead in school drinking water based on the information in the 1988 EPA Lead Contamination Control Act. The latest revision in 2014 was based on new information in the 2014 EPA Reduction of Lead in Drinking Water Act. The 2014 version is superseded by this 2018 guidance.

Guidance Values of Lead

Lead is still present in many areas of our environment, including materials that were commonly used in plumbing systems. To help in understanding the risks posed by environmental lead, a variety of guidance values have been developed at different times by different organizations. Some of the values are relatively recent, others much older; some are health based, while others are for statistical assessment of a water system. This table summarizes guidance values frequently identified with public health protection.

Guidance Value: ppb (parts per billion)	<u>Description</u>
0 ppb	EPA has set a maximum contaminant level goal (MCLG) of zero for lead in water. Note: analytical tests can only measure down to their detection limits; it is not possible to actually measure down to 0 ppb.
1 ppb	The American Academy of Pediatrics recommends this level be used as a standard for school drinking water taps. Note: The minimum repeatable detection limits achieved by laboratories today are typically between 0.5 and 2.0 ppb.
5 ppb	Illinois, Michigan and Washington DC use this value as a trigger for schools to implement lead hazard reduction or provide notification. Health Canada has proposed this value as their new Maximum Allowable Concentration. See Health Canada (https://www.canada.ca/en/health-canada/programs/consultation-leaddrinking-water/document.html#a1) Is the International Bottled Water Association (IBWA) Bottled Water Code of Practice finished water quality product standard.
15 ppb	Public water systems sample for lead following the EPA Lead and Copper Rule. No more than 10 percent of a water system's samples are allowed to be above this level. However, this is not a health-based value. It is applied as a statistical calculation to determine when a public water system must explore corrosion control treatment options to reduce lead in the water based on the laboratory detection limit available at the time of the rule making. This action level has not been updated since 1991. Several states have adopted this value in their school guidance in order to match the Lead and Copper Rule value.
20 ppb	This is the trigger value used in EPA's Lead in Drinking Water in Schools and Nonresidential Buildings (1994), now the 3Ts (2005). This value has not been updated since the publication of these documents and is not a health-based value.

4. Sampling Program Development:

- a. The Environmental Coordinator, Timothy Harbo, will conduct or update the inventory of all taps used for cooking or drinking water.
 - i. A drinking water faucet or tap is the point of access for people to obtain water for drinking or food preparation. A faucet/tap can be a fixture, faucet, drinking fountain or water cooler. Drinking water taps typically do not include bathroom taps, hose bibs, laboratory faucets/sinks or custodial closet sinks; these should be clearly marked not for drinking.
 - ii. Taps used for human consumption should only be cold water taps

- iii. Hot water taps should never be used to obtain water for drinking water or food preparation.
 - iv. Check all drinking fountains to ensure EPA has not identified them as having a lead lined tank under the LCCA.
 - v. This list can be found at: Lead in Drinking Water Coolers (<http://tinyurl.com/kr8kppf>)--If a drinking fountain within the school is found on this list, it should be removed from use immediately.
- b. The inventory will be attached to the Lead Testing Program. The inventory will be updated if taps are added or removed.
 - c. The Environmental Coordinator, Timothy Harbo, will set a sampling schedule so all taps identified in the inventory are tested within 5 years.
 - d. Determining the logistics for sampling:
 - i. Testing will be done by the Environmental Coordinator.
 - ii. Minnesota Valley Testing Laboratories(MVTL) will be contacted for laboratory analysis.
 - e. A schedule will be attached to the Lead Testing Program (Every 5 years)

5. Conduct First Draw Tap Monitoring:

- a. Conduct First Draw Tap Monitoring – Taps must be sampled once every five years. All monitoring of taps has been completed and taps have been sampled within the last five years.
- b. The Environmental Coordinator, Timothy Harbo, will complete first draw tap monitoring. Monitoring will follow the practices in the Commissioner’s Model Plan.
- c. Taps must be sampled once every five years. Document the next testing date for each tap. The Environmental coordinator will document future testing dates.
- d. Water Sampling
 - i. Water from taps used for drinking or food preparation must be tested for lead using “first draw” samples. First draw means that the samples are collected before the fixture is used or flushed during the day. Use only cold water for collecting lead samples. It is necessary to consider the order in which tap samples are collected to avoid the potential of accidentally flushing a tap. Always start at taps closest to where the water enters the building.
 - ii. Sample site preparation and sample collection must be performed consistent with the following conditions:

1. Note that it may be necessary to collect samples over a number of days to ensure only first draw samples were collected;
2. The day before sampling- normal usage of the sampling tap should occur;
3. The night before sampling - secure the fixture from being used (e.g., hang a “Do Not Use” sign);
4. Do not use sampling taps for a minimum of six hours. MDH recommends not exceeding 18 hours;
5. Do not remove aerators or attachments;
6. Collect the first draw sample using a 250 mL bottle. Be sure to start sampling at taps closest to where the water enters the building so that no accidental flushing occurs;
7. Complete all scheduled sampling for that sampling period; and
8. Have samples analyzed by sending to a laboratory or conduct analysis using field analyzers. Be sure to follow all instructions from the lab or field analyzer manufacturer.

e. Results

- i. Water sources testing above the recommended levels of 5 ppb will be retested.
- ii. Following retest, water sources that have lead levels above 5ppb will be removed as a drinking source or the source of lead contamination will be found and mitigated.

6. Communicate Results:

A school that has tested for lead in drinking water must make the results available for public review. Parents must be notified of the availability of the information.

- a. Contact person is the Environmental Coordinator, Timothy Harbo.
- b. The Environmental Coordinator will make all test and follow-up results available for public review upon request.
- c. Schools will make the availability of the information known to parents by providing notice in annual publication and on the school website
- d. Date notification completed: **Annually in August**
- e. A copy of the document showing that notice was completed will be kept with the lead program in the district’s Health & Safety office.

7. Interpret Sample Results

- a. Once a school receives its sample results, it should verify that all results are expressed in parts per billion (ppb). For water samples, this will sometimes be stated as micrograms per liter ($\mu\text{g/L}$), which is equivalent to ppb.
 - i. Recommended Lead Hazard Reduction Options
 1. < 5 ppb to Non-Detected--
 - a. Tap may be used as normal;
 - b. Record result and test again in 5 years; and
 - c. Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request.
 2. 5 ppb to 20 ppb
 - a. The tap may be used for cooking and drinking water while steps are taken to reduce overall exposure. A higher number of taps with elevated results increases the urgency to implement hazard reduction.
 - b. Options include:
 - i. Retest the sample tap and attempt to more accurately determine the source of the lead; consider monitoring tap more frequently until the source of lead is found and removed;
 - ii. Consider the feasibility of flushing or other steps to minimize lead exposure, including limiting softened water supplies to hot water taps only, taking into account other actions that the school may already have in place;
 - iii. Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request.
 3. > 20 ppb
 - a. Action should be taken to reduce exposure. The specific action(s) taken will be dependent on individual school conditions.
 - i. Options include:
 1. Remove tap from service until problem is demonstrably corrected by replacement, a flushing program, filtration, or treatment;

2. Do not use tap for cooking or drinking water;
3. Retest the tap and attempt to determine the source of the lead; If the tap is not replaced, consider monitoring tap more frequently, such as annually, until the source of lead is found and removed;
4. Implement a flushing protocol or other lead hazard reduction option; sampling should be use to evaluate effectiveness;
5. Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request; and
6. Provide targeted communication and education to individuals, parents, and staff members that routinely use that tap.

8. Lead Hazard Reduction Options

If the school receives its water from a Community Public Water Supply (such as a municipal water supply) the school is encouraged to work with them to assess the source contribution of lead coming into the school and if the school has a lead service line. For schools on their own well, the only way to characterize lead contribution from the water source is to do a test of water coming into the building.

1. Option 1. Removal of Lead Sources
 - a. Engineering plans and specifications for the plumbing system are useful for identifying sources of lead and helpful in determining if sources of lead can be removed from service or replaced with lead free fixtures. Options for eliminating lead sources include:
 - i. Remove tap/fixture from service. If the tap is seldom used, it may be disconnected or removed from the water supply line, but first verify the tap is not required for local building code compliance;
 - ii. Replace with lead free fixture/plumbing component in accordance with Reduction of Lead in Drinking Water Act;

2. Option 2. Implement a Flushing Program
 - a. Flushing the drinking water taps (letting the water run for a set amount of time on a regular basis) can effectively reduce lead concentrations in drinking water. A flushing program works to reduce lead concentrations by clearing the taps of water that has been in contact with plumbing components that may contain lead. While flushing can work to reduce lead, it requires staff time, diligence, and commitment to ensure effectiveness. Essential to any flushing program is monitoring after flushing to verify effectiveness.
 - b. There are two primary types of flushing programs: Individual Tap Flushing and Main Pipe Flushing.
 - i. Individual Tap Flushing Program
 1. May be implemented if lead concentrations are found to be high at certain taps;
 2. Flush individual taps that have been tested and found to have high lead levels. This procedure is to be followed each day the school is in session;
 - a. Run each tap for 2 to 3 minutes in the morning before children arrive
 - b. Run each tap midday for two to three minutes if the tap has been unused and stagnant for the morning period
 3. Periodic testing may be done prior to and after the midday flushing to ensure the lead concentrations have remained low throughout the morning hours. If they have not, the flushing time should be increased or another option should be implemented;
 4. After weekends or breaks, run each tap for ten to fifteen minutes before children return to school then return to normal use; and
 5. Frequency and duration of flushing should be reasonably documented.
 - ii. Main Pipe Flushing Program
 1. May be implemented if lead concentrations are found to be high throughout the entire school or confined to a certain area of the school. This procedure is to be followed each day the school is in session;
 2. Begin by flushing the tap furthest away from the water source for at least ten minutes;

3. Next flush the tap the second furthest away and continue in this manner until all taps have been flushed;
 4. Flushed samples should be periodically collected and analyzed for lead to confirm the effectiveness of flushing programs;
 5. It is recommended that midday samples and end of the day samples be taken periodically to ensure the lead concentrations have remained low throughout the day. If they have not, another option should be implemented; and
 6. Review the results upon receipt and continue to optimize the procedure to reduce lead.
3. Option 3 - Remove tap from services
 - a. All taps that come back > 5ppb on retest may be taken out of service for the use of drinking or food preparation.
 - b. Taps may continue to be used for handwashing and non-consumption purposes.
 4. All taps affected by a lead hazard reduction option should be retested to ensure the control options worked. A first draw sample is to be taken using the procedure outlined in Step 5.
 - a. Interpreting Post Control Option Results
 - i. If the analysis does not detect lead, no further action is required, as long as the control option remains in place. The next sample should be collected within five years;
 - ii. If the analysis shows lead remains present, continue twice daily flushing. A midday sample, as specified in Step 5, should be collected to determine if flushing is effective. Alternatively, a new control option can be implemented followed by retesting as specified in Step 5.

9. Additional Lead Concerns:

- a. Painted surfaces
 - i. Surfaces that are peeling and/or are going to be altered by scraping, remodeling, or demolition, will be tested for lead content.
 - ii. Painted surfaces that are peeling and/or will be disturbed are required to be removed using the following guidelines:

1. Before performing any alteration, including painting and decorating, on a surface, evaluate the surface to determine if the process will create a potential for lead exposure.
2. If lead exposure is a possibility, inform the Environmental Coordinator.
3. The Environmental Coordinator will assess the situation to determine the potential for lead exposure.
4. In cases where lead exposure is a potential, a sample of the surface material will be taken and analyzed to determine lead content.
5. In cases where lead content is found, construction practices will be modified to lower potential for exposure. Modifications are as follows:
 - a. Cover floor surface with plastic.
 - b. When removing paint minimize dust by use of water.
 - c. Minimize the spread of paint dust by isolating area from ventilation sources.
 - d. Dispose of paint debris as a hazardous material.
 - e. Clean up surfaces with water and a chelating agent. Do not sweep up dry material
 - f. Where construction practices cannot be modified, containment of exposure will be implemented, protective equipment will be utilized, and air will be monitored during the process.
 - g. This also applies to the use of outside contractors. Although they are responsible for their employees' health and safety, the Cooperative will notify contractors of potential presence of lead and request that contractors contain lead containing material to area of construction and prevent contamination of other areas of the building.
 - h. Inspection- Custodial staff will report surfaces that have peeling or flaking paint to the Environmental Coordinator. These areas will be tested and documented for lead content.