LEAD IN WATER MANAGEMENT PLAN

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Review and Update Log

Date	Reviewer	Status	Notes
05/02/24	Wayne Warzecha & Josh Baumann	Updated	Implemented plan based off of the MDH Model Plan
	Person	Reviewed	
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Plan for Lead Testing

Early Care and Education Settings (ECES) must complete these steps or formulate a plan that addresses the core concepts of planning, testing, remediating, reporting, and communicating results. An alternative plan must accurately and efficiently test for the presence of lead in water in facilities serving pre kindergarten students and students in kindergarten through grade 12 and take steps to reduce lead if detected at 5 ppb or above.

Required Components of a Model Plan

Step 1 - Sampling Program Development

A program to assess and sample for lead in drinking water must incorporate, at a minimum, the items below:

- ☐ Designate who will inventory water fixtures and collect water samples.
- ☐ Inventory drinking water fixtures. Identify how each fixture is used and identify those used for consumption that will need to be tested. (example, drinking water and food preparation).
  A drinking water fixture is the point of access for people to obtain water for drinking or food preparation. Examples of fixtures include but are not limited to taps, faucets, drinking fountains and water coolers. Drinking water fixtures typically do not include bathroom taps, hose bibbs, laboratory faucets/sinks or custodial closet sinks; these should be clearly marked not for drinking. If a fixture that is accessible to staff or children is not tested it must be clearly marked with signage or made inaccessible. Signage should take into consideration the age of children and languages spoken.
  Only cold water fixtures should be used for human consumption.
  Hot water fixtures should never be used to obtain water for drinking water or food preparation.
  Check all drinking fountains to ensure they are not identified as having a lead-lined tank. More information in Lead Water Coolers Banned in 1988 (PDF).
  If a fixture within the school is found on this list, it should be removed from use immediately.
  The inventory should be updated if taps are added or removed.
- ☐ Determine a schedule for sampling.
  All fixtures used for drinking water or food preparation must be tested at a minimum of once every five years. (See Appendix A for schedule)
  If budget or resources do not allow all fixtures to be tested in the first year, it is suggested that fixtures be prioritized, with all high priority fixtures tested the first year, medium priority the second, and low priority the third. The fourth year should be used as a “makeup” year, if needed.
  Recommended priority levels are:
  - ❖ High priority: fixtures used by children under the age of six years of age or pregnant women (e.g., drinking fountains, nurse’s office sinks, classrooms used for early childhood education and kitchen sinks)
  - ❖ Medium priority: other fixtures regularly used to obtain water for drinking or cooking (e.g., Family and Consumer Science sinks, classroom sinks, and teacher’s lounges)
  - ❖ Low priority: other fixtures that could reasonably be used to obtain water for drinking but are not typically used for that purpose.
- ☐ Determine logistics for sampling.
  Water testing should be consistent with the established schedule. Prior to testing it must be determined if school staff or a contractor will conduct the testing.
  It will need to contact an accredited laboratory or purchase field testing equipment. If the facility is participating in the WIIN program, MDH will provide appropriate laboratory analysis and supplies for testing.
  The day before sampling the water in the facility should undergo normal water usage. DO NOT plan to sample during an extended closure. DO NOT conduct pre-stagnation or flushing in advance of testing if flushing is not part of your daily building practices.

Option 1: Analysis by an Accredited Laboratory

Laboratory analysis typically involves a school district or consultant contracting with an accredited lab to obtain sample bottles. The laboratory will send instructions for sampling, sample bottles, and a chain-of-custody form to document time and date collected, collector name, and sample location. Table 3 summarizes the limitations and benefits.

Table 3 - Limitations and Benefits of Using an Accredited Laboratory

Limitations	Benefits
Analytical costs. These vary from lab to lab. Currently, typical per sample costs for lead and copper analysis may range from $20 - $50, depending on a variety of factors	District and/or consultant will not need to maintain instrument calibration records
May take longer to get results than using a field analyzer	Uses a chain-of-custody to ensure integrity of sample analysis process
Typically requires shipping	Analysis done by third-party may provide more independent review/transparency. Accredited labs use EPA-approved methods and have met industry standards for analysis.
	Analysts are certified and trained

A listing of accredited laboratories may be found at Search for Accredited Laboratories
Program = Safe Drinking Water Program | Analyte = Lead | Matrix = Drinking Water

Option 2: Analysis Using Field Analyzers

A field analyzer can be a useful tool for quickly and efficiently testing for lead in drinking water. If staff from the facility is doing the sampling or the consultant uses a field analyzer, it is important that limitations and proper use are understood. The field analyzer must be approved by EPA for lead testing in drinking water. Table 4 summarizes the limitations and benefits.

Table 4 - Limitations and Benefits of Using Field Analyzers

Limitations	Benefits
Some analyzers may not measure all forms of lead in drinking water. It is important that the instrument you use measures *total* lead (particulate and dissolved). If the instrument does not measure all types of lead in drinking water, your result could be biased low	Get results faster
Staff using an instrument need to ensure that the instrument is properly calibrated and maintained according to manufacturer's specifications, and that records of calibration and maintenance are kept	Useful when doing large numbers of samples or investigative sampling where many samples might be taken from one fixture
Instruments may require chemicals which will need to be stored and that can expire	Can be done on-site (no shipping needed)
Field instruments may not have limits of detection that are as low as an accredited laboratory. Be sure that the method you use can identify concentrations as low as 1 ppb	Can be more cost efficient depending on frequency of use
Some instruments may have interferences with other contaminants and under or overestimate the lead level. This may require that additional tests for iron, manganese, hardness, alkalinity, or other contaminants be done prior to use of the field analyzer, to ensure that the instrument will be operated to meet manufacturer's specifications	

Step 2 - Conduct First Draw Tap Sampling

Once the plan from Step 1 is set, sampling must be conducted according to the established schedule and priority. Water from fixtures 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. the order in which samples are collected must be considered to avoid the potential of accidentally flushing a fixture. Always start at fixtures closest to where the water enters the building.

Sample site preparation and sample collection must be performed consistent with the following conditions:

Preparation and Planning

- ➔ It may be necessary to collect samples over a number of days to ensure only first draw samples are collected
- ➔ The day before sampling - normal usage of the sampling fixture should occur
- ➔ The night before sampling - secure the fixture from being used (e.g., hang a “Do Not Use” sign)
- ➔ Do not use sampling fixtures for a minimum of eight hours. MDH recommends not exceeding 18 hours; and
- ➔ Do not remove aerators or attachments.

Sample Collection

EPA recommends using a 2-part sampling procedure.

Part 1

Collect a minimum of 250 mL first draw sample. Be sure to start sampling at fixtures closest to where the water enters the building so that other fixtures are not accidentally flushed.

Part 2

If the result from Part 1 is high, collect a repeat minimum of 250 mL first draw sample as in Part 1. In addition, collect a 30-second flush sample to attempt to identify if the lead is coming from the plumbing behind the fixture or if flushing will help reduce lead. To collect a 30-second flush sample, after the water has been stagnant, as in the sample in Part 1, turn on the fixture and allow the water to run for 30 seconds and then fill the sample container.

ECES with active daily flushing programs or considering flushing may want to consider conducting Parts 1 and 2 during the same sampling event to verify flushing effectiveness and reduce the total number of samples that may need to be collected. Collecting these at the same time will also reduce the response time for investigating a high first draw result. Laboratory analysis may take days to weeks depending on lab capacity.

If not taking these samples at the same time, and elevated lead levels are found in Part 1, the water should not be consumed while preparing follow-up actions.

Have samples analyzed by sending to an accredited laboratory or conduct analysis using field analyzers. Be sure to follow instructions from the lab or field analyzer manufacturer.

Special Sampling Considerations

Sometimes there are special fixtures that schools or child cares may have that need additional care and consideration when conducting sampling. Some common special fixtures include ice makers, in-line coffee makers, and kitchen kettles. Initial sampling for these special situations can be conducted as follows:

Ice Makers: Fill a suitable container (250-mL or larger, wide mouthed bottle or other container) provided by the laboratory at least three-quarters full of ice. Do not touch the ice with bare hands. Use a non-metal scoop or disposable plastic gloves to place the ice in the container.

In-Line Coffee Makers: These are coffee makers that are directly connected to the building plumbing. These often have a hot water spigot used for dispensing hot water for tea or other beverages. If there is a spigot on the coffee maker, you can collect it from the hot water side.

Kitchen Kettles: Many times, these kettles are just used for warming ingredients or food and are not used as a source of water for consumption. If they are labeled as not to be used for consumption and only used for warming, they do not need to be tested. If the kettle is used for consumption and has a spigot that could be used for sampling it can be sampled similar to the in-line coffee makers.

Results for these fixture types need special consideration and review. For guidance on additional samples or sampling after high results the EPA 3Ts Module 5 has information on how to find sources of lead in plumbing using advanced sampling techniques to evaluate fixtures.

Step 3 - Interpret Results

Once an ECES 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 (µg/L), which is equivalent to ppb.

Figure 2 presents possible lead hazard reduction options for various lead levels. More comprehensive actions may be necessary to address health threats from higher concentrations. As there is no safe level of lead, it is important to incorporate lead hazard reduction options and communicate at all levels of lead in order to raise awareness and reduce exposure.

The state of Minnesota has set 5 ppb as the threshold to take remediation steps. Public schools, charter schools, and child care centers MUST remediate when lead is 5 ppb or higher. MDH recommends that other facilities serving children clearly identify their policy for remediating.

Guidance on Interpreting Results and Recommended Remediation Options

It is critical to understand that health risks from lead do not abruptly change at varying concentrations of lead. As lead concentrations, the duration of exposure, or the number of fixtures impacted (example, distribution) steadily increases, the risks posed to students steadily increase. Response options should consider vulnerability of those exposed, concentration of lead, duration of exposures, and current practices to reduce lead, among other things. A result of 4 ppb is not appreciably safer than a result of 5 ppb.

Mitigation strategies used will depend on the site-specific conditions of the facility such as building age, plumbing materials, water use pattern, incoming water quality, and population served. It may take a combination of options and multiple steps over a period of time to manage/remove lead in drinking water. Analytical results can be highly variable, and a clear pattern should be identified before implementing any

strategy. ECES may consider prioritizing strategies to prevent exposures to students and staff most at risk. The following discussion provides the most common hazard reduction options but is not intended to be all-inclusive. EPA's 3Ts guidance document is also an excellent resource for strategies on finding lead sources and implementing mitigation.

Figure 2: Remediation Actions

5 ppb or higher
➔ Do not use for cooking or drinking ➔ Remove tap from service until problem is addressed ➔ Perform corrective action to reduce below 5 ppb and retest to confirm
Non-detect or less than 5 ppb
➔ Non-detect means lead was not present ➔ Normal tap use ➔ Retest in 5 years

Step 4 - Take Corrective Actions (Remediate)

Individual facilities vary tremendously across the state, it is imperative that final decisions on corrective actions are driven by local conditions and considerations. Actions that may be ideal in one ECES may not be appropriate for another setting.

The recommendations in this section were compiled to assist ECES in choosing the best lead hazard reduction option to reduce exposure to lead in their ECES. Options may be implemented individually, in combination, or not at all, depending on the specific situation at an individual ECES. Because no two facilities are exactly alike, best management practices will likely vary across the state.

In addition to possible remediation options outlined in Figure 2, the options further described here are in priority order (with the highest priority listed first and lowest priority last) of long term effectiveness in reducing lead hazards. Even when lead is detected at very small levels it shows that there is room to examine best practices such as changing or implementing routine maintenance strategies. For additional information, see Appendix D: Detailed Fixture Evaluation found on page 59 of the 2018 3Ts Revised Manual (PDF).

Option 1: Removal and/or Replacement of Lead Sources

Removal of sources of lead is the preferred way to remediate. 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:

- ➔ Remove the fixture from service. If the fixture is seldom used, it may be disconnected or removed from the water supply line, but first verify the fixture is not required for local building code compliance
- ➔ Replace with lead-free fixture/plumbing component
- ➔ If the existing fixture is suspected to be the source of contamination, replace with a lead free fixture
- ➔ Replace other sources of lead, including lead pipe, lead solder joints, and brass plumbing

components with lead free materials

- ➔ To minimize the introduction of lead into drinking water systems, go to EPA's website to identify lead free certification marks for drinking water systems and plumbing materials. More information can be found in How to Identify Lead Free Certification Marks for Drinking Water System & Plumbing Products.

Option 2. Implement a Flushing Program

Flushing the drinking water fixtures (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 fixtures 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. Verify the effectiveness of your flushing program by conducting follow up lead testing. Flushing programs do not remove the source of lead from buildings and must be continuously followed to prevent lead from building up.

A facility should develop standard operating procedures to conduct flushing that it maintains onsite and should ensure that facility staff are aware of the responsibility and importance of maintaining flushing programs. Flushing programs are a water management strategy and can work to maintain high quality of water by reducing corrosion, maintaining chlorine residual, and if your public water system uses corrosion control treatment (such as orthophosphate) it can help bring this treatment through your buildings to protect plumbing materials. Flushing programs can also help with legionella management. Warm, stagnant water can be an incubator for legionella and other biological activity.

There are two primary types of flushing programs:

Individual Tap Flushing and Main Pipe Flushing

Individual Tap Flushing Program

- ➔ May be implemented if lead concentrations are found to be high at certain fixtures.
- ➔ Flush individual fixtures that have been tested and found to have high lead levels.This procedure is to be followed each day the facility is in session.
- ➔ During periods of normal use:
- ➔ Run each fixture in the morning before children arrive and again at midday. Site specific conditions will determine how long a fixture needs to be flushed and the number of times a day a fixture needs to be flushed. Refer to 3Ts Flushing Best Practices (PDF) for guidance on flushing.
- ➔ 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.
- ➔ After weekends or breaks, run each fixture for ten to fifteen minutes before children return to the facility, then return to normal use; and
- ➔ Frequency and duration of flushing should be reasonably documented.

Main Pipe Flushing Program

- ➔ May be implemented if lead concentrations are found to be high throughout the entire facility or confined to a certain area of the facility. This procedure is to be followed each day the facility is in session
- ➔ Begin by flushing the fixture furthest away from the water source for at least ten minutes

- ➔ Next flush the fixture the second furthest away and continue in this manner until all have been flushed
- ➔ Flushed samples should be periodically collected and analyzed for lead to confirm the effectiveness of flushing programs
- ➔ 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
- ➔ Review the results upon receipt and continue to optimize the procedure to reduce lead.

More on Flushing

Flushing is a best management practice used to reduce lead levels by controlling the age of the water. It can be an interim or long-term option. This guidance presents flushing procedures that MDH has found effective in reducing the lead level in drinking water. Site-specific conditions will determine how long a fixture needs to be flushed and the number of times a day a fixture needs flushing. The key to using flushing as a best management practice is monitoring that demonstrates the lead level has been reduced.

Flushing can be done manually or can be automated with flushing devices. Flushing done for the purposes of lead reduction needs to be done and tracked at a fixture level. Manual flushing can take significant staff time depending on the size of the building and scope of flushing needed. Automatic flushing can help reduce the time needed to flush individual fixtures or be part of a routine water management plan.

Note that facilities implementing a flush program may wish to identify non-consumptive uses for the flushed water (watering plants, cleaning, etc.) in order to make use of this resource.

If a flushing program is stopped, MDH recommends the facility document why it stopped flushing and complete lead testing within 3 months of stopping the flushing program to assess any impacts to lead levels in drinking water. Flushing as a remediation option is only effective if it continues to be implemented consistently.

Cleaning Aerators

Cleaning aerators is a routine maintenance strategy that can help reduce lead levels if implemented consistently. Aerators are screens located at the end of some fixtures. Cleaning aerators once after a high lead test will not prevent lead levels from increasing later.

- ➔ As a routine maintenance strategy we recommend cleaning aerators once every 6 months or once per quarter.
- ➔ Clean aerators more often if visible build up or changes to water flow are observed.
- ➔ If aerator cleaning is used as a remediation strategy, retest to make sure it was effective and implement a regular cleaning program to ensure lead does not build up again.
- ➔ Cleaning aerators does not remove the source of lead from the plumbing. Removing aerators so that they do not have to be cleaned can be an option but will impact the water usage and flow of the water through the fixtures.

Option 3: Treatment

Point-of-Use (POU) Treatment Device

A POU water treatment device may be installed at fixtures where lead has been detected. These include reverse osmosis, on-sink water filters, filtered hydration stations, pitcher filters, and other devices. A POU device should be approved to meet NSF Standard 53, NSF Standard 58, or an equivalent standard along

with a claim of lead reduction. The device must be installed, operated, and maintained in accordance with the manufacturer's recommendations. POU treatment systems may be subject to Department of Labor and Industry (DLI) or local administrative authority plan review and approval prior to installation. Contact DLI at (651) 284-5063 for more information. For some examples of home treatment options that will reduce lead in drinking water see Home Water Treatment factsheet.

Check that the device you are using is NSF certified for lead reduction at: NSF Certified Drinking Water Treatment Units, Water Filters.

Point of Entry (POE) Chemical Treatment

POE chemical treatment involves adjusting the water chemistry to reduce the amount of lead absorbed by the water. This may be done by adding a chemical to the water as it enters the building. Typical methods of chemical treatment include addition of a phosphate-based or silica-based corrosion inhibitor or an adjustment to the water's pH or hardness. These chemicals provide a protective barrier along the pipes (pipe scale) that prevents lead from getting into the Water.

All chemical treatment systems are subject to MDH plan review and approval prior to installation. In addition, a school that installs POE corrosion control treatment becomes a public water system and is required to meet the regulatory requirements of the SDWA. If classified as a public water system, the school is responsible for meeting all of the water quality standards of the SDWA, is subject to inspection of the water distribution system, and is required to have a certified water operator.

POE chemical treatment does not take away the need for a water management or flushing program to ensure treatment consistency throughout the building. In parts of facilities with low water usage it may still be possible for elevated lead levels to be detected.

Contact the Minnesota Department of Health Drinking Water Protection Program at 651-201-4700 to determine if additional requirements will apply to your school prior to installing treatment.

Building Relationships with your Public Water System

If the ECES receives its water from a municipal water supply, the ECES is encouraged to work with them to assess the source contribution of lead coming into the ECES and if the ECES has a lead service line.

Most ECES obtain their water from a public water system or municipal water supply. ECES should maintain good relationships with their water system.

1. Contact the water system if you have questions or concerns about your incoming water quality. If there are sudden changes in taste, odor, or color the water system is the best contact to help you address those concerns.
2. Check with your water system to see if your facility has a lead service line, lead gooseneck, or galvanized steel service line. These lines may need to be replaced and coordinating with the city is the best way to ensure the whole line is fully removed. The city may have funds available to assist in removal of these lines.
3. Community water systems report their annual water quality in a Consumer Confidence Report that is available every year. Search for your Consumer Confidence Report (CCR). Water systems will also notify their customers if there is a water quality problem that requires special actions (flushing, boiling etc..) Be sure you know how your water system will communicate concerns to your organization.

It is rare for lead to be coming from the public water supply itself, most lead in drinking water comes from

corrosion of plumbing materials such as service line or premise plumbing. For ECES 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.

Step 5 – Retest

All fixtures affected by a lead hazard reduction action must be retested to confirm the remediation action was effective at lowering the level of lead below 5 ppb. A first draw sample is to be taken using the procedure outlined in Step 2. If a flushing program was not implemented as part of the remediation, you may also want to collect a flushed sample(s) to identify if flushing would be helpful for reducing lead in the facility.

Interpreting Results after Implementing Remediation Actions

Different facilities will choose different actions or combine actions. It is very common to combine aerator cleaning and flushing for example.

- ➔ If the analysis does not detect lead or lead is less than 5ppb, no further action is required, as long as the remediation or water management option remains in place. The next sample should be collected within five years.
- ➔ If the analysis shows lead remains present and is still at or above 5 ppb: A new remediation option can be implemented followed by retesting as specified in Step 2.
- ➔ When evaluating flushing both first draw and midday samples should be evaluated to ensure that lead levels do not rebound during the day. If lead remains present after flushing additional options such as filters, or fixture removal/replacement may be necessary.

If results show persistent elevated lead levels, testing/remediation should continue until the lead source is found and hazard reduction options implemented. The overall goal is to have the state agencies, ECES, parents, and students all work together to ensure that available resources are best targeted to minimize exposure to lead in drinking water.

Step 6 - Communicate Results

Schools

(a) A school district or charter school must send parents an annual notice that includes the district's or charter school's annual testing and remediation plan, information about how to find test results, and a description of remediation efforts on the district website. The district or charter school must update the lead testing and remediation information on its website at least annually. In addition to the annual notice, the district or charter school must include in an official school handbook or official school policy guide information on how parents may find the test results and a description of remediation efforts on the district or charter school website and how often this information is updated.

(b) If a test conducted under subdivision 3, paragraph (a), reveals the presence of lead at or above five parts per billion, the school district or charter school must, within 30 days of receiving the test result, either remediate the presence of lead to below five parts per billion, verified by retest, or directly notify parents of the test result.

In addition to testing for lead and meeting the remediation requirements, a lead hazard reduction program should include a comprehensive communication plan. The purpose of a communication plan is to provide a process for school employees, students, and parents to address questions, report results and provide ongoing, up-to-date information regarding sampling efforts.

School management should:

- ➔ Assign a designated person(s) to be the contact.
- ➔ Notify affected individuals about the availability of the testing and results; in a period not to exceed 30 days. School employees, students, and parents should be informed and involved in the communication process. Results of initial and any follow-up testing should be easily accessible along with documentation of lead hazard reduction options.
- ➔ Posting the information on a website is preferred, but the information should also be available to those without easily accessible internet access. Examples of other information venues are meetings, open houses, and public notices.
- ➔ Whenever lead is detected, identify, and share specific activities taken to minimize lead exposure by following the guidance in Figure 2 or refer to EPA 3Ts for additional remediation strategies.

MDE and MDH have developed an Education and Communication Toolkit A Technical Guidance and Model Plan for Minnesota's Public Schools (PDF) to aid schools in implementing this technical guidance/model plan.

Child Care Centers -

MN Statute 145.9273 creates a communication requirement for child care centers as follows:

“A licensed or certified child care provider that tested its buildings for the presence of lead shall make the results of the testing and any remediation steps taken available to parents and staff and notify them of the availability of results. Reporting shall occur no later than 30 days from receipt of results and annually thereafter.”

Head Start programs that are classified as a licensed or certified childcare provider must make the results of testing and remediation steps taken available to parents and staff and notify them of the availability of the results. Reporting shall occur no later than 30 days from receipt of results and annually thereafter.

A facility that is sampling once every 5 years would share the old results each year until it tests again. The Education and Communication Toolkit: Reducing Lead in Drinking Water in Child Care Settings (PDF) will assist child care settings in implementing this technical/guidance.

Step 7 - Report Results

Schools -

MN State Statute 121A.335 creates a reporting requirement for schools as follows:

(a) Starting July 1, 2024, school districts and charter schools must report their test results and remediation activities to the commissioner of health in the form and manner determined by the commissioner in consultation with school districts and charter schools, by July 1 of each year. The commissioner of health must post and annually update the test results and remediation efforts on the department website by school site.

(b) A district or charter school must maintain a record of lead testing results and remediation activities for at least 15 years.

Keeping records is useful for identifying trends/anomalies in results at any drinking water fixture or the school distribution system as a whole.

Child Care Centers -

MN Statute 145.9273 creates a reporting requirement for child care centers as follows:

(a) A licensed or certified child care provider that tested its buildings for the presence of lead shall make the results of the testing and any remediation steps taken available to parents and staff and notify them of the availability of results. Reporting shall occur no later than 30 days from receipt of results and annually.

(b) Beginning July 1, 2024, a licensed or certified child care provider must report the provider's test results and remediation activities to the commissioner of health annually on or before July 1 of each year.

Head Starts

Many Head Start programs are classified as child care centers or are located within a school program. These child cares would be required to report results to MDH. Head Start programs that do not meet these requirements would not have to report results to MDH.

Step 8 – Water Management Plan

MN State Statute 121A.335 states:

By July 1, 2024, a school district or charter school must revise its plan to include its policies and procedures for ensuring consistent water quality throughout the district's or charter school's facilities. The plan must document the routine water management strategies and procedures used in each building or facility to maintain water quality and reduce exposure to lead. A district or charter school must base the plan on the United States Environmental Protection Agency's "Ensuring Drinking Water Quality in Schools During and After Extended Closures" fact sheet and the United States Environmental Protection Agency's "3Ts Toolkit for Reducing Lead in Drinking Water in Schools and Child Care Facilities" manual. A district or charter school's plan must be publicly available upon request.

A water management plan is a helpful tool for ECES to use to maintain and improve facility water quality. Every building is different, and the scope of a water management plan may look vastly different from a small building to a large building or campus-style facility.
Key components of water management plan include:

1. Identify all water fixtures and identify how they are used. This will help determine which fixtures you will test for lead and which fixtures should be labeled/posted for non consumption. Identifying fixtures will also help identifying hazards.
2. Identify areas of concern where lead levels are likely to be highest or where biological activity may be a concern (warm, stagnant water).
3. Decide what routine maintenance strategies (engineering controls) should be used and how to access their effectiveness (lead testing, chlorine testing, pH, temperature, etc.). This will be highly specific to your building.
4. Decide how you will intervene when assessments reveal that controls are not being met.
    a. Ex. A lead test was above 5 ppb at an old fixture. Intervention: replaced with a new fixture and retested showing non-detect for lead.
    b. Ex. Biofilm/pipe scale was observed on a faucet. Intervention: the faucet and aerator were cleaned and flushed.
    c. Ex. A weekly chlorine test shows no detected chlorine residual in areas not used frequently. Intervention: Flushing was done until a chlorine residual was observed. Chlorine was tested daily for several days to ensure the regular flushing protocol was working.
    d. Ex. Hot water lines are not hot. This is a hazard because when hot water is allowed to cool it can provide growth for bacteria. Intervention: Temperature regulator and mixing valves were checked. A mixing valve was broken, after repair the problem was corrected.
5. Make sure the program is running as designed and is effective.
6. Document and share results.

The larger the building and more complex the plumbing system is the more information and details may be needed in your water management plan.

Resources for building water management plans include:

- Developing a Water Management Program to Reduce Legionella Growth & Spread in Buildings (PDF); and
- Ensuring Drinking Water Quality in Schools During and After Extended Closures.

Glossary of Terms and Acronyms

Aerator - An aerator is found at the tip of the faucet. Aerators are screwed onto the faucet head, creating a non-splashing stream, and delivering a mixture of water and air.

Child Cares - A licensed or certified child care provider is a child care center licensed under Minnesota Rules, chapter 9503, or a certified license-exempt child care center under chapter 245H.

Corrosion - A dissolving and wearing-away of metal caused by a chemical reaction between water and plumbing materials in contact with the water.

Department of Human Services (DHS) - State agency that regulates child cares.

Detected - An amount of lead above the detection level. A concentration of lead analyzed with a certainty of precision to be at or above the detected level.

Detection Level (DL) - The lowest concentration of lead that can be analyzed with a certainty of precision. Results below this level are often expressed as “non-detected,” “nd,” or “<DL.” For the purposes of this document, 2 ppb is the maximum detection level recommended for lead analysis.

Drinking Water Faucet/Tap - 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 when clearly marked as not for drinking water or food preparation.

EPA 3Ts – Environmental Protection Agency 3Ts for Reducing Lead in Drinking Water is a guidance document to help schools and child care facilities implement a program for reducing lead in drinking water. The document focuses on training, testing, and taking action.

Federal Safe Drinking Water Act (SDWA) – Federal law regulating the public drinking water supply.

Field Analyzer - Instrument suitable for water analysis in the field and provides results.

First Draw Sample - The first water drawn from a fixture after the water has sat undisturbed in the plumbing system for at least eight hours.

Fittings - Plumbing components used to join sections of pipe or to join pipe to fixtures.

Fixture - Exchangeable device connected for the distribution and use of water in a building. Examples: drinking fountain, sinks, shower, tub, toilet, hydrant.

Flush(ing) - Running water at a fixture or fixtures to clear standing water from the plumbing system.

Flush Sample - A water sample that has been collected following the flushing of a drinking water fixture.

Flux - A substance applied during soldering to facilitate the flow of solder. Flux used prior to 1986 contains lead and can itself be a source of lead contamination in water.

Lead-Free - Weighted average of not more than 0.25% lead in wetted surface material for pipe, pipe and plumbing fittings and fixtures, and 0.2% lead for solder and flux.

Limit of Detection (LOD) - The lowest quantity of a substance that can be distinguished from the absence of the substance due to the instrument’s analytical process. It is usually lower than the detection level.

Minnesota Department of Education (MDE) – State public education agency.

Minnesota Department of Health (MDH) – State public health agency.

National Standards (NSF) – Authority for health standards, testing, certification, consulting and training for food, water, health products, and the environment.

Non-Detect - A lead result below the limit of detection, often expressed as “non-detected,” “nd,” or “<DL.”

pH - A measure of acidity and alkalinity between 0 (highly acidic) and 14 (highly basic); 7 is neutral.

Parts per Billion (ppb) - A standard unit of measurement commonly used to describe the concentration of lead in drinking water. Also expressed as micrograms/liter (µg/L).

pH - A measure of acidity and alkalinity between 0 (highly acidic) and 14 (highly basic); 7 is neutral.

Point of Entry (POE) - A water treatment device installed to treat all water entering a single school, building, facility or home. Example: water softener.

Point of Use (POU) - A water treatment device intended to treat water for direct consumption, typically at a single fixture or a limited number of fixtures. Example: faucet-mount cartridge filter.

Primary Prevention - aims to prevent disease or injury before it ever occurs. It is done by preventing exposures to hazards that cause disease or injury, altering unhealthy or unsafe behaviors that can lead to disease or injury, and increasing resistance to disease or injury should exposure occur.

Public Water System (PWS) - A system that has at least 15 service connections or regularly serves an average of 25 individuals daily at least 60 days out of the year.

Community Public Water System (CPWS) - A PWS which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Examples: municipalities, manufactured mobile home parks.

Nontransient Noncommunity (NTNC) Public Water System - A PWS that is not a CPWS and that regularly serves at least 25 of the same persons over 6 months per year. Examples: schools, child care centers, factories.

Schools - Minnesota’s public and charter schools serving students in pre-kindergarten through grade 12.

Service Connection - The pipe that carries fixture water from the public water main to a building.

Solder - A metallic compound used to seal the joints between pipes. Until 1988, solder containing up to 50% lead was legally used in potable water plumbing. Lead free solders, which can contain up to 0.2% lead, often contain one or more of the following metals: antimony, tin, copper, or silver.

Technical Guidance/Model Plan - The plan developed by the commissioners of health and education to accurately and efficiently test for the presence of lead in drinking water in public school buildings, as required under MN State Statute 121A.335 and MN State Statute 145.9273.

United States Environmental Protection Agency (EPA) - Federal agency with a mission to protect human health and the environment; oversees implementation of the SDWA.

Water Infrastructure Improvements for the Nation (WIIN) - A federal grant from the EPA to states to develop and implement a lead testing program for eligible schools and child cares. This program is designed to provide sample kits and laboratory analysis for lead in drinking water.

References

Applicable references:

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  https://www.revisor.mn.gov/statutes/cite/121A.335
- MN Rules, part 145.9273 Testing for Lead in Drinking Water in Child Care Settings
  https://www.revisor.mn.gov/statutes/cite/145.9273
- Centers for Disease Control and Prevention - Childhood Lead Poisoning Prevention
  https://www.cdc.gov/nceh/lead/
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  https://www.health.state.mn.us/communities/environment/lead/index.html
- Ensuring Drinking Water Quality in Schools During abd After Extended Closures
  https://www.epa.gov/sites/production/files/2021-03/documents/us_epa_schools_extended_closures_factsheet_508_3-4-2021_0.pdf
- How to Identify Lead Free Certification Marks for Drinking Water System & Plumbing Products
  https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100LVYK.txt
- The Role of Head Start Programs in Addressing Lead in Water ACF-IM-HS-23-01
  https:/eclkc.ohs.acf.hhs.gov/policy/im/acf-im-hs-23-01
- Lead and Copper Rule
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- Lead Contamination Control Act 1988
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- Final "Lead Free" Rule
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- 3Ts for Reducing Lead in Drinking Water Toolkit
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- Long Term Facilities Maintenance
  https:/education.mn.gov/MDE/dse/schfin/fac/ltfm/
- DHS Grants and RFPs
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- Child Care Facility Revitalization Grants
  https://www.firstchildrensfinance.org/for businesses/grants/
- Child Care Aware - Child Care Service Grants
  http://childcareawaremn.org/professionals/caregivers/grants-scholarships/ccrr-grants
- Child Care Aware - Local Resources
  http://childcareawaremn.org/local-resources
- WIIN Grant: Voluntary School and Child Care Lead Testing and Reduction Program
  https://www.epa.gov/dwcapacity/wiin-grant-voluntary-school-and-child-care-lead-testing-and-reduction-grant-program
- Minnesota Lead Testing in Schools and Child Care in Drinking Water
  https:/www.health.state.mn.us/communities/environment/water/schools/mngrant.html
- Drinking Water Protection Grant Information
  https:/www.health.state.mn.us/communities/environment/water/com/grants.html
- Lead Remediation in Drinking Water in Schools and Child Care setting Grant Program
  https:/www.health.state.mn.us/communities/environment/water/com/leadremgrant.html
- Accredited Laboratories
  http://www.health.state.mn.us/labsearch
- EPA 3Ts Module 5
  https://www.epa.gov/system/files/documents/2021-08/module_5_detailed_fixture_evaluation_508.pdf
- 3Ts Revised Manual (PDF)
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- Consumer Confidence Report (CCR)
  https:/mnccr.web.health.state.mn.us/index.faces
- 3Ts Flushing Best Practices (PDF)
  https://www.epa.gov/sites/default/files/2018-09/documents/flushing_best_practices_factsheet_508.pdf
- Home Water Treatment Fact Sheet
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- NSF Certified Drinking Water Treatment Units, Water Filters
  https://info.nsf.org/Certified/dwtu/
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  https:/www.health.state.mn.us/communities/environment/water/docs/toolkit.pdf
- Education and Communication Toolkit: Reducing Lead in Drinking Water in Child Care Settings (PDF)
  https:/www.health.state.mn.us/communities/environment/water/docs/toolkitccare.pdf
- Developing a Water Management Program to Reduce Legionella Growth & Spread in Buildings (PDF)
  https://www.cdc.gov/legionella/downloads/toolkit.pdf

APPENDIX
A - Sampling Schedule

The ECES will perform testing as follows in Chart 1A renewing the cycle every 5 years afterwards.

Chart 1A: Sampling Schedule		
Year	Facility	Fixtures
2024	Elementary School	All Fixtures In Building Except Those Labeled Non-Potable
2025	Community Ed	All Fixtures In Building Except Those Labeled Non-Potable
2026	Middle School	All Fixtures In Building Except Those Labeled Non-Potable
2027	High School	All Fixtures In Building Except Those Labeled Non-Potable
2028	Catch Up Year	All Fixtures In Building Except Those Labeled Non-Potable