EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

# Michigan Filter First Sampling Guidance

The Clean Drinking Water Access Act, 2023 PA 154, and amendments to the Child Care Organizations Act, 1973 PA 116, collectively known as Filter First, requires all K-12 public and nonpublic schools, and licensed child care centers to install lead-reducing filters on all consumptive fixtures. All filtered fixtures must be sampled regularly (annually for schools and every 2 years for child care centers) to ensure filters are effective against potential lead exposure.

## Create a Communication Plan

Determine how you plan to communicate about lead testing in your facility. It is recommended to be transparent and promote the Filter First laws and lead testing to parents, guardians, and staff. Example language for communicating Filter First information is available at Michigan.gov/FilterFirst.

Certain lead test results require communication with parents, guardians, and staff within 30 days of your facility receiving the results. Having a plan in place on how to communicate these lead test results ensures that parents, guardians, and staff receive timely, accurate information regarding the water being consumed in the building and any remediation efforts taking place.

## Prepare to Sample

### Learn how to collect samples

Decide who will be responsible for sampling. Anyone can collect samples for Filter First sampling, if the individual understands how to collect the samples properly. A certified water operator or other professional is not required to conduct sampling, but they may be utilized. A webinar recording on sampling is available at Michigan.gov/FilterFirst

### Create a sampling plan

A sampling plan must be created and included in the Drinking Water Management Plan (DWMP). This plan may include a reference map of the building's floor plan, with all filtered fixtures identified and numbered, starting at the filtered fixture closest to the point of water entry into the building and working outwards.

Use unique fixture identification codes (fixture ID codes) for each filtered fixture to easily correlate the filtered fixtures to the sample results. The fixture ID codes should be long enough to identify the building, location, and fixture type, but not too long causing the laboratory reporting to cut off some of the code (approximately 20 characters for the EGLE laboratory).

The recommended naming scheme for fixture ID codes is 2-3 letters for the building name, 3-5 letters for the location name, followed by 2-3 letters for the fixture type. More in depth instructions on utilizing this recommended naming scheme with examples is included in the Drinking Water Management Plan template.

The plan must include the order (sequence) the fixtures are sampled. Always put the fixture closest to the point of water entry into the building as number one, then number the fixtures in sequence to the farthest end. If the building has multiple wings, decide which wing to sequence first to the farthest fixture in that wing, and do the same with the other wing(s). Always start on the lowest floor of the building and work upwards. For specific recommended sampling routes for a building, reach out to EGLE-DWEHD-FilterFirst@michigan.gov with a reference map of the building's floor plan.

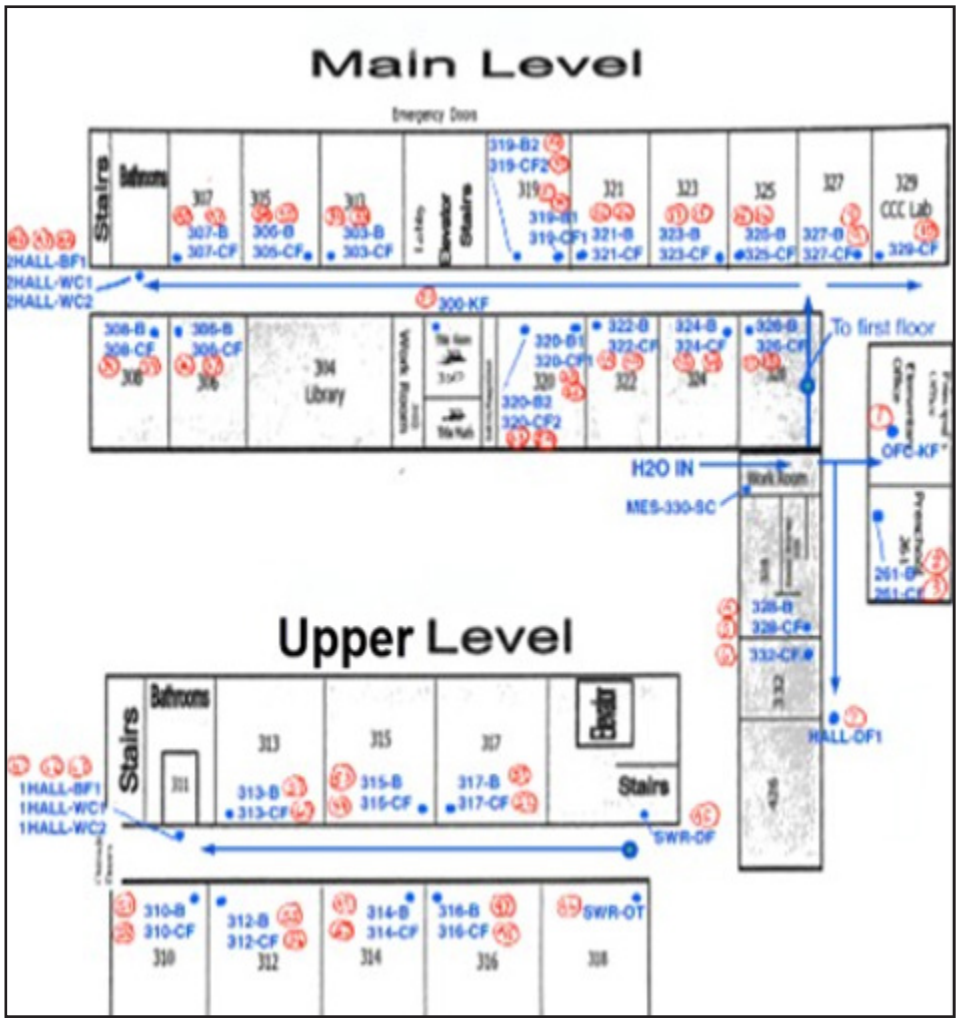


*Figure 1. An example floor plan of a school with multiple levels. The flow of the water from the entry point is included. Using the flow of the water throughout the building, each fixture is numbered in sequential order for sampling.*

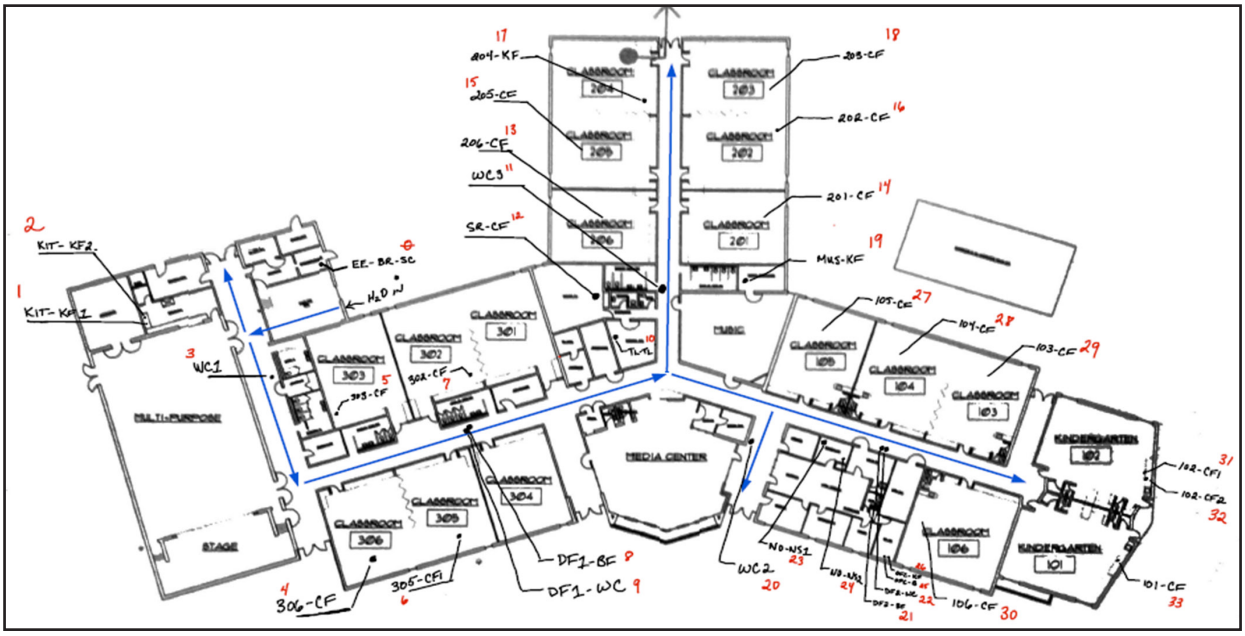


*Figure 2. An example floor plan of a school with multiple wings. The flow of the water from the entry point is included. Using the flow of the water throughout the building, each fixture is numbered in sequential order for sampling, down one wing to the end and repeating on the next.*

## Choose a certified lead laboratory

Choose a laboratory certified for testing for lead in drinking water. The State of Michigan or the Environmental Protection Agency (EPA) ensures that these certified laboratories use the appropriate methods that guarantee accurate, precise results. A certified laboratory for lead testing is required to be used to meet the sampling requirements for Filter First.

Things to consider when choosing a certified laboratory may include the cost and location. Costs will vary depending on the services provided by the laboratory, and some may offer bulk analysis rates for many samples. The location of the laboratory may allow samples to be returned in person, rather than being shipped. The chosen laboratory must have 250 milliliter (ml) wide mouth sample bottles for lead sampling, using EPA method 200.8.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) maintains a list of all Michigan laboratories certified for lead testing on the Laboratory Certification Program webpage.

### Create a sampling kit

Creating a sampling kit to use while sampling is recommended. This may include permanent markers to label sample bottles, a notepad and pen to record observations at sample locations, rubber bands to attach the sample form to the bottle if using the EGLE laboratory, a rolling cart to transport bottles and supplies, a watch or phone to reference the time of each sample collection, the sample bottles, and laboratory paperwork. When sample bottles are obtained from the laboratory, do not unseal the containers prior to the sample collection to prevent any potential contamination.

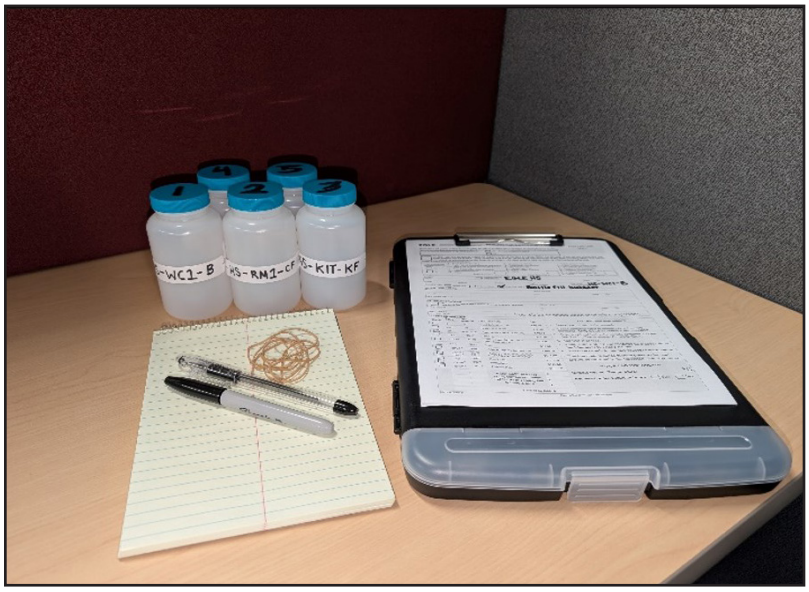

*Figure 3. An example of a sampling kit, including pre-labeled sample bottles for each sampling location, pre-filled laboratory paperwork matching the labels on the sample bottles, a pen and permanent marker, rubber bands, and a clipboard.*

## Stagnate the Building Water Prior to Sampling

The entire building's water (including restrooms and nonconsumptive fixtures) must not be used and remain motionless for at least 8 hours prior to collecting the samples. This water stagnation period replicates the water quality and potential lead exposure that children are consuming after the building is closed overnight. It is recommended to collect samples the next morning before children arrive.

Prior to the sampling date, post signs with the date and time span of non-use, notifying building users to not use any water (including restrooms and nonconsumptive fixtures) in the building. Teachers, maintenance workers, sports teams, and clubs potentially using the facilities after hours must be notified beforehand to prevent any confusion or accidental usage.

Do not close shut-off valves to prevent water usage prior to sampling as this could cause particles to break loose, and cause results to be nonrepresentative of the water typically consumed. It is important for the building to be sampled under normal conditions to have results that represent typical use and potential lead exposure.


*Figure 4. An example of signs posted throughout a building alerting building users of upcoming sampling. Signs are posted above each point of potential water usage including handwashing sinks, bathrooms, and filtered bottle-filling stations.*

# Sample Collection

## Filling out laboratory paperwork

It is important to fill out the laboratory paperwork, known as the laboratory analysis form or chain of custody form, clearly and properly for each sample. Some parts of the laboratory paperwork may be filled out ahead of time, however the date and time the sample is collected must be filled out at the time of sampling.

Complete the laboratory analysis form neatly, including the date and time the sample was collected, the fixture identification code for identifying which sample correlates with which filtered fixture, and contact information for where the test results should be sent. The test or analysis requested will be lead. If a laboratory analysis form includes columns with different preservatives options, leave this section blank.

It is recommended to fold the form and use a rubber band to attach it to the correlating sample bottle, if utilizing a laboratory that has a laboratory analysis form for each sample bottle. Some laboratories will allow multiple samples to be included on a single laboratory analysis form. Package the bottles listed on the laboratory analysis form together with the form, prior to sending the samples to the laboratory for analysis.

# Collecting the Samples

Begin collecting samples following the reference map and sampling plan, starting at the filtered fixture closest to the point of water entry into the building. Do not use any of the building's water prior to or during sampling.

Label the bottle with the fixture identification code, if not already done. Sample bottles may be labeled ahead of sampling. Use a permanent marker to label each bottle with the fixture identification code. The cap may also be marked with the fixture number for the sampling order.

All samples must be collected from cold water outlets. Do not bypass filters or remove aerators for sampling. Open each sample bottle at the filtered fixture location just before sampling, being careful not to touch the inside of the bottle or the cap. Place the bottle under the fixture and fill the bottle to the neck, turn off the water, and tightly place the cap back on the bottle.

*Figure 5. A sample bottle filled to the neck and tightly capped.*

Depending on the type of filtered fixture, collecting the sample may look different. Follow the recommendations for each type of filtered fixture below.

- ## Faucets with faucet-mounted filters

  Make sure the filter is in the "on" position and hold the open sample bottle below the faucet filter. Turn on the cold water at a normal, full flow. Fill the sample bottle to the neck with cold water, turn the fixture off, and tightly cap the bottle.

*Figure 6. A sample bottle being filled to the neck from a faucet with a faucet-mounted filter in the "on" position.*

- ## Faucets with in-line filters (including pot fillers, sprayers for rinsing produce, etc.)

  Hold the open sample bottle below the fixture. Turn on the cold water at normal, full flow. Fill the sample bottle to the neck with cold water, turn the fixture off, and tightly cap the bottle.

*Figure 7. A sample bottle being filled to the neck from a faucet with an in-line filter.*

- ## Bubblers with in-line filters

  Hold the bottle under the fixture anticipating where the water will arc. Open the cold-water handle or push the button. Fill the bottle to the neck with cold water, turn the fixture off, and tightly cap the bottle.

*Figure 8. A sample bottle being filled to the neck from a bubbler with an in-line filter.*

- ### Filtered bottle-filling stations

  The sample must be collected from the bubbler outlet on the station, not the bottle fill outlet. For bi-level filtered bottle-filling stations with two bubblers, the sample must be collected from the bubbler on the filtered bottle-filler's basin. Hold the bottle under the fixture anticipating where the water will arc. Open the cold-water handle or push the button. Fill the bottle to the base of the neck, turn the fixture off, and tightly cap the bottle.

*Figure 9. A sample bottle being filled to the neck from the bubbler on the basin of a bottle-filler.*

- ### Filtered water pitchers (for child care centers only)

  Filtered water pitchers are not required to be sampled; however, sampling is recommended to ensure that the filtered water pitchers are being used correctly and are protective against potential lead exposure. Fill the filtered water pitcher with water from an unfiltered fixture, that has not been used for at least 8 hours. Allow the water pitcher to finish filtering the water. Carefully fill the bottle to the neck with the filtered water pitcher, stop filling the bottle, and tightly cap the bottle.

*Figure 10. A sample bottle being filled to the neck from a filtered water pitcher.*

- ### Purchased water (water delivery service or bottled water)

  Purchased water from a reputable source is not required to be sampled. The purchased water must comply with the Michigan Safe Drinking Water Act, which includes lead sampling and testing. The bottling facility, and treatment and bottling practices must comply with state and federal regulation for basic sanitation, design, and construction. For more information on bottled water, visit Michigan.gov/mdard/licensing/food/water.

It is recommended to record any faucet or filter observations on a notepad while sampling. For example, filter status light is red, filter is damaged, faucet leaks at base, low water pressure, water discoloration, etc. Follow up on any observations made and ensure that the filtered faucets are being maintained timely and properly.

## Returning the Samples to the Laboratory

Once all the samples have been collected in tightly capped and clearly labeled sample bottles, return the samples to the laboratory in a timely manner with the chain of custody forms. Samples should be returned and analyzed by the laboratory from which the kits were ordered. Water samples for lead testing must be received by the laboratory within 14 days to be considered valid samples. If the samples are not returned to the laboratory in time, the samples will need to be recollected. It is recommended to return the samples to the laboratory as soon as possible, either by hand delivery or returning by shipment.

If the samples are being shipped to the laboratory, it is recommended to ship the samples as soon as possible. Prepare for any potential shipping delays due to long weekends or holidays.

## Understand the Sample Results

Once the laboratory provides the sample results, it is important to understand what the laboratory results mean. Not all laboratories report test results in the same unit measurements. Results will either be reported in metric form, as either milligrams per liter (mg/L) or micrograms per liter (ug/L), or they will be reported as a concentration such as parts per million (ppm) or parts per billion (ppb).

Laboratory results will contain the analyte or parameter name, the result, the reporting unit, and the reporting limit (RL). For the Filter First lead testing results, the analyte/parameter name will be lead. The result and unit column contain the sample results. The reporting limit is the lowest value of the analyte that the laboratory can detect and quantify. The reporting limit is not the result.

Different laboratories' results will look slightly different.

| TESTING INFORMATION | | | | | REGULATORY INFORMATION | | |
|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Units** | **RL** | **Date Tested** | **MCL/AL** | **Method** | **CAS #** |
| Lead | Not detected | mg/L | 0.001 | 02/28/2025 | 0.012 | EPA 200.8 | 7439-92-1 |

The analyses performed by the EGLE Drinking Water Laboratory were conducted using methods approved by the U .S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

*Figure 11. An example of an EGLE laboratory report, showing lead as "Not detected" in the sample.*

When reviewing the results, it is important to know that these are equivalent and can be used interchangeably:

- milligrams per liter (mg/L) = parts per million (ppm)
- micrograms per liter (ug/L) = parts per billion (ppb)

Results can be converted between units easily. It is recommended to communicate in ppb, as these results will be whole numbers rather than decimals and more straightforward to understand. To convert a result from ppm to ppb, multiply the result in ppm by 1000.

For assistance with understanding laboratory results, reach out to EGLE-DWEHD-FilterFirst@michigan.gov.

## Interpret and Respond to the Sample Results

Review the sample results promptly to ensure that there is no delay in completing any follow-up actions. All results must be recorded and filed with the DWMP and available on request. Only certain results are required to be submitted to EGLE.

If the initial lead test results of a filtered fixture result in the detection of lead, resampling is required after checking the filter cartridge and replacing it, if needed. Additional actions are required if the resample lead test results of the filtered fixture result in another detection of lead.

### Test Results Not Detecting Lead (0 ug/L or 0 mg/L)

If the lead test results of a filtered fixture result in non-detection of lead, record and file these results with the DWMP. No additional actions are required.

### Test Results Detecting Lead From 1 to 5 PPB (1–5 ug/L or 0.001–0.005 mg/L)

If the lead test results of a filtered fixture result in a lead detection from 1 to 5 ppb, immediately check the status of the filter and replace the cartridge if it is due for replacement. Ensure that the filter is installed properly and then resample the filtered water.

If the resample lead test results in non-detection of lead, record and file all results with the DWMP. No additional actions are required.

If the resample lead test results in a lead detection, consult with EGLE on how to proceed.

### Test Results Detecting Lead Greater Than 5 (5 ug/L or 0.005 mg/L)

If the lead test results of a filtered fixture result in a lead detection greater than 5 ppb, immediately shut off the fixture or make it inoperable. A sign must be posted near the fixture stating that it is inoperable because of high lead concentration. The filter cartridge must be replaced, and the filtered water resampled. The sign must remain posted until actions have been taken to reduce the risk of lead exposure, including the resample having a lead concentration no greater than 5 ppb.

If the resample lead test results in non-detection of lead, record and file all results with the DWMP. No additional actions are required.

If the resample lead test results in a lead detection, consult with EGLE on how to proceed.

## Communicate Sample Results to Parents, Guardians, and Staff

It is important to communicate with parents, guardians, and staff members proactively. Be transparent and promote the efforts being made to reduce lead exposure from drinking water while children are attending school or a licensed child care center. It is recommended to begin communication before sampling begins and address any questions or concerns proactively.

If sampling results continue to detect lead above 5 ppb at a fixture(s), a notice including the results and information on lead exposure must be sent to parents, guardians, and staff members within 30 days of receiving the results. Example language for communicating about lead testing and elevated lead results is available at Michigan.gov/FilterFirst.

EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

**Michigan.gov/FilterFirst | 800-662-9278**