

MANDATORY LEAD IN WATER TESTING

TRAINING MODULE 1:

WATER TESTING GENERAL INFORMATION



**OREGON
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Purpose of the Training Modules

The process of testing water and submitting your reimbursement request represent expenditure of time, effort and moneys that may be significant. While the actual testing can be straightforward, some of the other work can seem confusing and daunting. ODE has prepared these training modules to help schools get things right the first time, with the intention of avoiding the frustration and wasted time and money which can happen when testing is not in compliance with the new requirements.

All New Program

Many of you participated in the voluntary testing in 2016, so you may be familiar with the basic testing processes. However, **there are some changes to the rules and requirements, and repeating the 2016 procedures will not meet the current regulations.**

Some of you may also have schools that get their water from well systems that require periodic testing. This new mandatory testing for lead is both separate from, and different from, well testing. **Testing that meets the requirements for the new lead testing will not satisfy your well testing requirements, and vice versa.**

After completing the training modules, if you are unclear about anything, **please contact Brian Hodges-French at Brian.French@ode.state.or.us before you begin testing.** We want to help you get things right the first time around.

Why Lead Testing is Important

It is well documented that elevated levels of lead in the body can cause developmental delays, learning difficulties and reductions of IQ, as well as other serious medical conditions. The EPA classifies lead as a probable human carcinogen. Lead builds up in the body over time, so ingestion of even small quantities of lead is a concern. Because the effects are cumulative, any source of lead can contribute to serious health consequences. Potential sources of lead can come from lead paint, lead contaminated dust, air, water and soil, and all should be considered a serious risk. During the voluntary water testing conducted in 2016, lead levels were recorded as high as 57,600 parts per billion (ppb). The current action level is 15 ppb. This represents a level that is more than 3,800 times the level assumed to be “safe,” although health experts caution that there is no known safe level of lead in the body. It should also be noted that while there were a significant number of other fixtures in this same building that tested high, there were many that tested well below 15 ppb. **This illustrates that it is NOT sufficient to just test a sampling of fixtures in a building.**

Specific Changes from Earlier Testing

Specific changes from 2016 testing include:

- 1) Legal obligation to test that is tied to Division 22 compliance
- 2) All results are to be measured and reported in parts per billion (ppb)
- 3) Action level has been lowered to 15 ppb
- 4) Extensive list of fixtures that must be tested
- 5) No flushing of lines prior to testing
- 6) Prescribed schedule of when each district must test
- 7) All samples must be drawn on a day when class has been in session the previous day
- 8) Mandatory fixture identification numbering protocol
- 9) Establishment of a regular flushing schedule is no longer an acceptable form of remediation

Testing Philosophy

When considering what constitutes a source for drinking water, you cannot think as an adult might think. Children are not miniature adults. Their brains have not fully developed and you cannot expect them to think or behave as adults might. As such, the basic criteria is to assume that any water source that a child can get their mouth on/under, cup their hands and drink from, or fill their water bottle from should be assumed to be a drinking water source.

What Must be Tested

The rules require that all sources of water must be tested for elevated levels of lead, unless it is specifically listed on the list of exempt fixture types. This includes ALL facilities, NOT just instructional facilities. As mentioned above, this will include sources that some might not think of as drinking water sources. If you believe a fixture that is on the exemption list should be tested, you may do so, and such testing will be eligible for reimbursement. However, if testing reveals elevated levels of lead, it must then be remediated. The exemption list includes:

- Shower heads
- Pipes used to convey water to systems for building heat
- Dedicated eye wash stations and emergency showers
- Fixtures with no student access used exclusively for building sanitation purposes by staff
- Fixtures used exclusively for irrigation, unless it is reasonable to believe that students or staff will use water from that fixture for drinking
- Fixtures in science and technical education classrooms that provide education to grades 6 through 12 exclusively where fixtures:
 - Have signs indicating they are not sources of drinking water, and
 - Are not intended to be used for drinking or food preparation as part of the curriculum (such as a Home Economics class)

When You Must Test

OHA, in consultation with ODE and stakeholders, determined that every school would have to test at least once every six years.

When Oregon conducted voluntary testing in 2016, ODE reimbursed schools for over 58,000 samples from over 52,000 fixtures. This testing covered roughly half of the fixtures in the state, and was enough to overload the state's testing labs. Given that current testing is estimated to cover in excess of 100,000 fixtures, resulting in some 130,000 samples being tested, it was clear that we couldn't simply test all fixtures in a single year and then repeat the process every 6 years. Additionally, many larger districts were concerned about being able to complete all testing in a single year and adequate funding to reimburse for testing costs are not available in a single given year.

Therefore, it was decided to spread the testing out over a 6 year window to accommodate the volume of testing required. The testing schedule is determined by district size, as determined by number of schools, including charter schools, with larger districts required to spread their testing out over multiple years, with the largest testing 1/6 of their facilities every year. Charter schools are required to test the same year as their sponsoring district. All ESDs will begin their testing cycle in the 2023 fiscal year (2022-23 school year).

Scheduling testing over an extended time period requires phasing in the testing. This means that some schools may not be scheduled to perform the first year of their 'Ongoing' every 6 year testing cycle for some time. In some cases, not until 2026. Since some of those schools have not ever done testing, or have not completed adequate testing, it was decided that ALL required fixtures in ALL school facilities must be tested between 2016 and June 30, 2020. The purpose of this 'Initial' testing is to ensure that all required fixtures have been tested, before phasing into the 'Ongoing' testing schedule. Fixtures that have been tested during the voluntary testing in 2016 (or since) are not required to retest at this time, but everything else requires testing now. This is what we describe as 'Initial' testing. Because of COVID-19 and the complications that it created for water testing, the June 30, 2020 deadline has been extended to June 30, 2021. For schools and districts that are scheduled to complete their first year of 'Ongoing' testing in the 2021 fiscal year, the requirement for 'Initial' testing is waived, and they will complete their 'Ongoing' testing during the 2021 fiscal year.

'Ongoing' every 6 year testing will begin in the year(s) scheduled as determined by your district size, as outlined in Section 3 of your new Healthy and Safe Schools (HASS) plan, and in the table below. This is not necessarily 6 years from when you last tested, but will be the beginning of testing every 6 years. Districts testing over multiple years are required to test, as nearly as possible, equal numbers of **fixtures** each year. They must develop a proposed schedule of which facilities they will test each assigned year and submit that schedule to ODE for approval as part of their HASS Plan.

The table below illustrates the testing schedule by district size for the first year of ‘Ongoing’ testing.

2021 Fiscal Year (2020-21 School Year)	2022 Fiscal Year (2021-22 School Year)	2023 Fiscal Year (2022-23 School Year)	2024 Fiscal Year (2023-24 School Year)	2025 Fiscal Year (2024-25 School Year)	2026 Fiscal Year (2025-26 School Year)
Districts with 1-3 Schools					
Completion of Initial Testing by All Districts	Districts with 4-6 Schools				
		Education Service Districts			
		Districts with 7-8 Schools			
				Districts with 9-10 Schools	
				Districts with 11-15 Schools	
			Districts with 16-20 Schools		
Districts with 20 + Schools					

Exemption from ‘Ongoing’ Testing

If plumbing in a building is all new, from the service connection forward, including all piping, valves and fixtures, a district may apply to ODE for exemption from ‘Ongoing’ testing, although a complete ‘Initial’ testing must still be performed. The exemption might apply in cases of construction of new buildings or renovation of existing structures that have been completely re-piped, providing that all criteria listed below can be documented. **All** of the following criteria must be met:

- 1) All plumbing, from the service connection forward must have been replaced later than January 1, 2014.
- 2) All plumbing materials must meet the ‘lead-free’ standard of no more than 0.25% lead by weight, including piping, valves, and fixtures.
- 3) All solder and flux meets the ‘lead-free’ standard of no more than 0.2% lead.
- 4) All required fixtures have undergone ‘Initial’ testing with the results indicating lead content of no more than 1 ppb.
 - a. When performing this ‘Initial’ testing, it is important to be sure that the lab tests down to at least 1 ppb Minimum Reporting Level (MRL). Test results indicating Non-Detect (ND) with a MRL of only 2 for instance, will NOT qualify for exemption, and would require retesting.
- 5) The exemption from ‘Ongoing’ testing must be requested from and approved by ODE. Proper documentation will be required before exemption is approved.

New Fixture and Sample Numbering Protocol

One of the new requirements is the use of a new fixture and sample identification numbering protocol. Because we will be tracking in excess of 100,000 fixtures statewide for years to come, it is important to have unique identifiers for each fixture and sample. Use of a uniform fixture numbering system will help both schools and ODE track all these fixtures over time and help avoid errors. It will also help ODE work with this huge volume of data in useful ways.

A more detailed explanation can be found in [Training Module 2 – Fixture and Sample ID Numbers](#).

The fixture ID # is 13 digits long, and the Sample ID # is 16 digits. While that may sound imposing, the system is really pretty simple and builds on itself. Like blocks stacked one on another.

The first 8 digits are the building ID # (used in the School Facilities Data Collection), which you may already be familiar with, so you are really just adding on to that number.

If you are unfamiliar with the building ID #, the first 4 digits are your Institutional ID #.

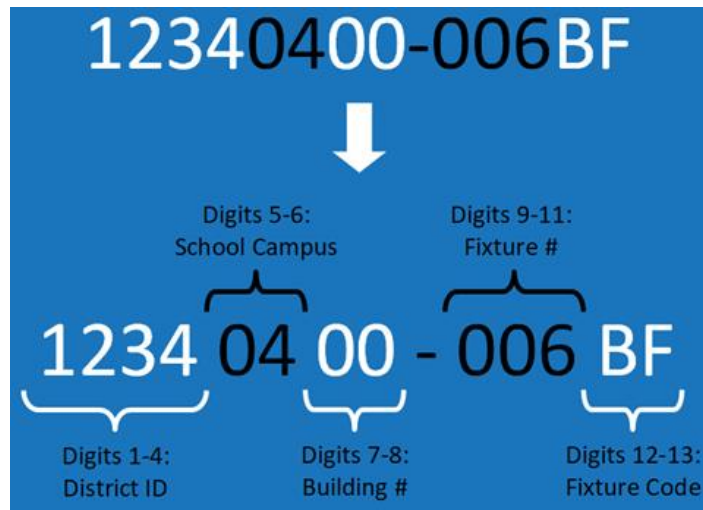
Digits 5 and 6 indicate a specific school (or campus).

Digits 7 and 8 indicate a specific building at a school or campus.

Digits 9-11 are numbers you assign to fixtures in a given building, starting with 001 and working up. So you would have 001, 002, 003, and so on. **Do NOT assign the same digits in the same building**, but when you move on to the next building, you can restart the numbering back at 001.

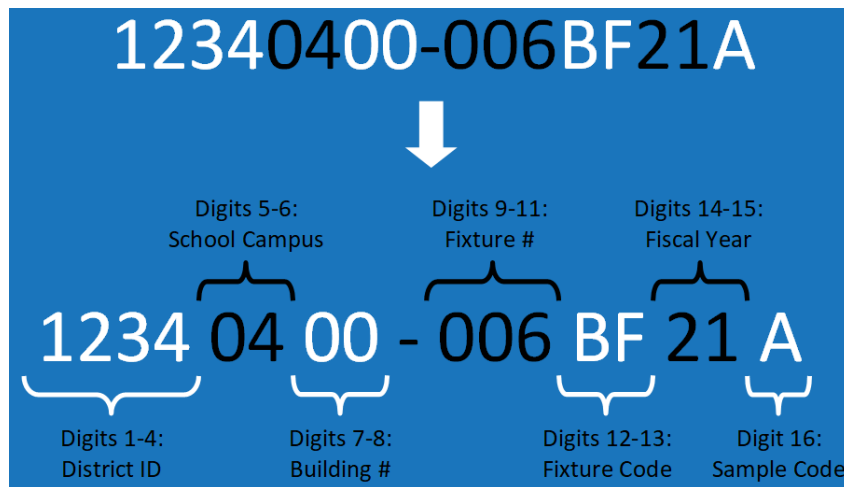
Digits 12 & 13 is a 2 digit letter code indicating the type of fixture. For instance, BF would be a Bathroom Faucet, DW would be a Drinking Water Fountain, KF a Kitchen Faucet, and so on. **Please use only the letter codes listed.**

Fixture ID # Coding	
DW = Drinking Water Fountain	SF = Staff/Office Faucet
WC = Water Cooler (Chiller)	KF = Kitchen/Food Prep
WB = Water Bottle Filler	IM = Ice Machine
CF = Classroom Faucet	SH = Shower Head
BF = Bathroom Faucet	OS = Outside Spigot
NS = Nurse's Office Sink	OT = Other (Specify)



For Sample ID #, we add 3 more digits. Digits 14 & 15 are the last 2 digits of the fiscal year the sample is drawn.

The final, 16th digit is a single letter indicating which sample is indicated if more than one sample is taken from a given fixture. For instance, the first sample drawn from a fixture, the initial draw sample, would be an A. If a 2nd sample is drawn, the code would be a B, a 3rd sample would be a C and so on.



When writing the Fixture ID # or Sample ID #, use one hyphen only, placed between digits 8 and 9, as in the following examples, 12340400-004BF and 12340400-004BF19A.

Prior to Testing

Successful testing requires an organized approach. Before beginning testing, assign fixture identification numbers to each fixture using the new protocol described above. You must prepare a Master Fixture ID spreadsheet for the purpose of tracking fixtures. Because all of this information will be required for reimbursement and verification of required testing, the tracker at minimum must include:

- 1) Specific building name and ODE Building Identification Number.
- 2) A unique description of each fixture location, such that someone coming into your school with no inside knowledge of your building could find that specific fixture.

- 3) The Fixture Identification Number, assigned using the ODE numbering protocol.
- 4) An index number to match the description and ID number to a shorter, easier to use number for use in the schematic described below. (Optional)
- 5) If you have previously had your own fixture numbering system, add a column to include this number as well so that previous records can be cross referenced with new records.

For your own records, you will need to track information such as test dates, results, and actions taken for all of your fixtures for years to come. You may choose to add columns to the Master Fixture ID spreadsheet described above to accomplish this, or develop a separate spreadsheet for this purpose.

Additionally, it is recommended that you prepare a schematic identifying locations of all fixtures along with either the Fixture ID Number or an index number to be matched to the Fixture ID Number in the Master Fixture ID spreadsheet. This will assist with avoiding future confusion about which fixture is which, as in six years' time, different personnel may be drawing the samples and may not interpret the written description of fixture locations the same way. This can often be accomplished by starting with the schematic you already have for fire escape and adding in the fixture locations and ID number or an index number to match to the ID number in the Master Fixture ID spreadsheet.

It is recommended that you review the Reimbursement Template before testing. This will help ensure that you know all the information required to complete the template.

Select a Testing Lab

Several factors play into selecting a testing lab for your school. A lab you have previously used may or may not be your best choice. Things to consider:

- 1) **You must use a lab that is ORELAP certified to test for lead in drinking water.** Certifications do require periodic renewal, so you should double check to be sure the lab you select is still certified. A list can be found on the [OHA website](#). There is also an [interactive map](#) on the OHA website that can help find lab locations in your area. Note that some testing labs have multiple locations but may not be certified to test for lead in water at all locations. In this event, they normally receive samples and send them on to their lab which is certified to complete testing. To use the map, click on the locations to see information about ORELAP labs in your area. A box will appear providing the lab name, contact information, and a list of materials they are certified to test for. **The list MUST show a "Yes" next to LEAD to indicate the lab is ORELAP certified to test for lead in drinking water.** While ORELAP and OHA strive to keep these lists current, it is always a good idea to specifically ask the lab if they are currently ORELAP certified to insure that the list you are looking at is not out of date. This is important as **testing by labs that are not ORELAP certified will have to be repeated and the costs are not reimbursable.** If you have any questions, contact Brian Hodges-French.
- 2) Consider asking labs to send test results not only as lab reporting sheets, but also as Comma Separated Value (.CSV) files. This will make transferring data to the Reimbursement Template and reporting test results easier, quicker and more accurate.

- 3) It can pay to shop around. Pricing varies from one lab to the next, and some will do copper testing at no additional charge.
- 4) There are some labs that do not have the proper accreditation themselves, but will send your samples on to another lab that does. While this may be more convenient in some instances, be aware that they typically charge a higher price per sample for this service. It may be better to select a different lab, even if you must pay to ship samples to the lab. Reimbursement is available for shipping costs. Save your receipts.
- 5) Controlling lab costs as much as practical helps be good stewards of the state's resources and leaves more funding available to be distributed on a per sample basis, above and beyond paying for the direct lab costs.

Prerequisites

Prior to drawing samples, the following prerequisites must be met:

- 1) Samples must be drawn on a day following a day when class is in session in the building. This will preclude you from testing during summer, winter, and spring breaks.*
- 2) Flushing of systems prior to testing is NOT allowed.*
- 3) Samples must be drawn in the morning before any water in the building is used, after plumbing has been idle for 8 to 18 hours.

***ODE, in consultation with OHA has temporarily suspended rules 1) and 2) during the time that schools are closed due to COVID-19 to allow schools to continue to test according to prescribed schedule. Rule 3) remains in place, as per [OAR 333-061-0400](#) and guidance from the [federal 3Ts](#).**

Draw Samples vs Flush Samples

All testing should start with 'Draw' samples. Draw samples are taken after an 8 to 18 hour stagnation period and **BEFORE ANY** water is run from the tap. By collecting the first water out of the tap, you are testing the water that has been sitting overnight in the fixture itself. Draw samples should detect elevated levels of lead that are caused by anything in the system, up to and including the fixture itself.

It is not necessary to take Flush samples unless the Draw test indicates high levels of lead. Flush samples are to be used as a diagnostic tool only. **A Flush sample below the action level, following a Draw sample above the action level is NOT an indication that lead levels are acceptable.** Remediation must still take place and the fixture cannot be returned to service until remediation has been completed and the fixture has passed a follow-up Draw test.

Flush samples are taken in the identical manner that draw samples are taken, **EXCEPT** that they are taken **AFTER the water has run for 30 seconds**. Flush samples are intended to detect elevated levels of lead caused by materials in the system before the water reaches the fixture. In many cases, if the Draw sample is high, but the Flush sample is acceptable, then the cause is the fixture. If the Draw sample and Flush sample test the same, then the problem is likely somewhere in the system besides the fixture.

Most commonly, elevated levels of lead can be corrected by replacing the fixture and the shut off valves beneath the fixture.

More detailed information can be found in [Training Module 3 – Water Sampling](#) and [Training Module 4 – Elevated Lead](#).

How to Test – Draw Samples

The collection process itself is fairly straight forward. You should plan your collection of samples in an organized manner to avoid missing fixtures. All samples must be collected in 250 milliliter bottles.

- 1) Fill out the label on the bottle (Client, Date/Time Collected, Sample ID Number as per protocol). You may want to fill out the labels ahead of time. Consider printing them out with a printer to make them easier to read. If you do so, be sure the ink is waterproof and that you match the correct label to each sample location.
- 2) **DO NOT TURN ON THE TAP YET. Some labs may put acid preservative in the bottles, so look at the label to see if it notes that acid is present. If the bottles contain acid, use safety glasses and point the bottle away from your face when filling.**
- 3) Remove the cap from the sample bottle and set it aside.
- 4) Hold the sample bottle under the tap.
- 5) NOW turn on the tap, slowly (to avoid splattering water or overfilling the bottle.)
- 6) Fill the sample bottle to the bottom of the neck. (Labs need space in the bottle to shake and mix the sample.)
- 7) Place the cap back on the sample bottle.
- 8) You are done sampling it. Move on to the next fixture.

A couple of important notes:

- Lead samples do NOT need to be iced.
- Labs will acidify/preserve the samples at the lab.

DO NOT:

- DO NOT rinse the bottle before collecting a sample.
- DO NOT partially fill the bottle. Fill to the bottom of the neck.
- DO NOT overflow the bottle. Fill to the bottom of the neck.

How to Test – Flush Samples

It is not necessary to take Flush samples unless the Draw sample indicates high levels of lead. Flush samples are taken in the identical manner that Draw samples are taken, **EXCEPT** that they are taken **AFTER the water has run for 30 seconds**.

Publishing Results

ORS 332.334 requires that all test results be made available to the public no later than 10 business days from receiving final test results. Test results must be published three separate ways. **You must publish all three ways:**

- Posted to the district's, ESD's or charter school's website,
- Available to the public in hardcopy in the main administrative office, and
- Emailed to staff, students and parents of minor students for whom the school has an email address. This includes providing actual final test results or providing direct access to final test results through links in the communications. It is not sufficient to simply instruct people to go to the school's website.

A more detailed explanation can be found in [Training Module 5 – Publishing Results](#).

Reimbursement

All testing for lead in water from January 2019 forward is eligible for reimbursement.

We will reimburse for:

- Direct lab fees
- Testing supplies
- Shipping and some other related costs
- Mileage (If your location is such that it is necessary to drive samples a significant distance as opposed to shipping them)

Reimbursement requires submission of:

- Completed Reimbursement Request template
- Copies of the lab reports
- Invoices and receipts

ODE will also reimburse an additional amount on a per sample basis to help offset collection costs. This additional amount per sample will be based on how much funding is left after all direct lab costs have been paid for all districts for a given year.

For additional information on program requirements and how to claim your reimbursements, please refer to [Training Module 6 – Reimbursement](#).