Lead in Schools Drinking Water

Theresa Sanders, WA DOH
Terry Veazey, WA DOH
Jerry Page, ESD 101

February 16, 2023
www.pswctup.org
LEAD IN SCHOOL DRINKING WATER
Environmental Public Health/ESD101
Introductions

Theresa Sanders  
*Unit Supervisor*  
Environmental Lead  
Exposure Prevention

Terri Veazey  
*Program Coordinator*  
Lead in School Drinking Water

Jerry Page  
*Industrial Hygienist, CIE*  
Worker Compensation: Safety and Hygiene ESD 101
Overview

- Health Impacts
- Laws and Rules
- New Requirements
- DOH Team and Process
- Drinking Water Testing in Schools – ESD 101
Lead and Health

Lead is a naturally occurring toxic metal and is still widely used in many products and industries. This has resulted in broad environmental contamination.

Global impacts of lead on health:

- ~1 million lives lost due to lead exposure in 2019 (WHO. 2021. Public Health Impact of Chemicals)
- 30% of the global burden of intellectual disabilities
- 4.6% of the global burden of cardiovascular disease
- 3% of the global burden of chronic kidney disease

Lead in the body:

- Effects brain, kidneys, liver, and bones
- Stored in teeth and bones
- Can be released during pregnancy
- Long-term, often irreversible, health impacts
Focusing on Children

The health effects of lead exposure are more harmful to children because their bodies are still developing.

- Children absorb more of the lead they are exposed to compared to adults.
- Young children exhibit more hand-to-mouth behavior, increasing their exposure and intake.
- Lead can be stored in their bones and released throughout their lifespan.
- Lead exposure and absorption can be exacerbated by other social determinants of health – nutrition and housing.
**How lead affects children’s health**

**Brain**
Any exposure is linked to lowered IQ, ADHD, hearing loss, and damaged nerves. Acute exposures can cause convulsions, loss of body movement, coma, stupor, hyperirritability, & death.

**Heart**
Studies suggest that adults who endured lead poisoning as children had significantly higher risks of high blood pressure 50 years later.

**Blood**
Lead inhibits the body’s ability to make hemoglobin, which can lead to anemia. This reduces oxygen flow to organs, causing fatigue, lightheadedness, rapid heartbeat, dizziness, & shortness of breath.

**Stomach**
Severe lead exposure can create intense abdominal pain and cramping.

**Kidneys**
Chronic exposures can cause chronic inflammation, which can lead to kidney failure, bloody urine, fever, nausea, vomiting, drowsiness, coma, weight gain, confusion, rash, and urinary changes.

**Reproductive System**
A moderate exposure can not only lower sperm count, but also damage them. Chronic exposures can diminish the concentration, total count, and motility of sperm, though it's unclear how long these effects last after the exposure ends.

**Bones**
Lead may impair development and the health of bones, which can slow growth in children.
Health Impacts of Lead on Children

Exposure to lead can seriously harm a child’s health and wellbeing.

Documented adverse effects include:
- Damage to the brain and nervous system
- Slowed growth and development
- Learning and behavior problems
- Hearing and speech problems

This can cause:
- Lower IQ
- Decreased ability to pay attention
- Underperformance at school
Chapter 28A.210.410 RCW: Lead contamination at drinking water outlets

Chapter 43.70.830 RCW: Lead contamination in drinking water in school buildings – Sampling and testing – Data-sharing agreement

Key Components:

- Required testing for lead in drinking water in public schools
- Specific requirements for sampling and testing placed on DOH and schools
- Lowered action threshold to 5ppb/15ppb immediate
- Requirements regarding remediation and communication placed on schools and OSPI
WAC 246-366A-130

- Water Quality Monitoring – Lead
- Part of the updated Environmental Health and Safety Standards for Primary and Secondary Schools
- Adopted in 2009 by the State Board of Health
- Has never been implemented

Follow the RCWs NOT the WAC
DOH Requirements

- Test lead in drinking water in schools built, or with plumbing replaced, before 2016 that have not tested for lead since 2014
- All initial testing completed by 2026 and then every five years
- Develop and make available technical guidance
- Develop and publish a two-year plan for sampling and testing
- Enter into a data sharing agreement (DSA) with the Office of the Superintendent of Public Instruction (OSPI)
School Requirements: Sampling & Testing

Sampling and Testing

Lead sampling of all water fixtures intended for human consumption at least once between 2014 and 2026.

Options for Sampling and Testing:

- DOH conducts sampling and testing.
- Hire a contractor for **sampling and testing** that meets the requirements of the law and submit test results to DOH.
- If sampling and testing already occurred, submit results to DOH when requested.
Within six-months of receiving lead results schools are required to adopt an action plan.

**Action Plan Requirements:**

- Describe mitigation measures implemented since receiving lead results
- Must align with technical guidance - consult with DOH (or local health jurisdiction)
- Include a schedule of remediation activities
- Include remediation testing once completed
- Provide the public with notice and opportunity to comment before the plan is adopted
- Post on a public website the most recent lead test results
- Communicate about lead annually
School Requirements: Remediation

- Spectrum of remediation options – closing off fixture to pipe replacement
- Funding is available through OSPI
- [DOH technical guidance](#)
- Additional technical is assistance available
DOH Lead in School Drinking Water Program (LISDW)

LISDW Team
- Supervisor – Theresa Sanders
- Program Coordinator – Terri Veazey
- Epidemiologists
- Samplers (2 currently)
- Public Health Lab and other DOH partners

Basics
- 2021-2023 sampling cohort selected prioritizing schools in regions with the highest lead exposure
- Sampling and testing began May 2022 – paused for summer months and resumed September 2022
DOH Engagement Process

- Initial outreach email sent to school district superintendents that are on the current two-year sampling plan
- District staff complete survey (i.e., building information, past testing, etc.) and return to leadfreekids@doh.wa.gov
- Next steps based on survey responses
DOH Engagement Process

Testing Already Complete
- Complete initial survey
- Send test results when requested by DOH
- DOH will review test results and sampling process
- Action plan required for elevated lead levels

Need Testing
- Decide if DOH or contractor will be used
- DOH selected for testing - you will be contacted by a DOH sampler
- DOH sampler will call or email to gather additional information
- Sampling event scheduled
DOH Post Sampling – Next Steps

- Water samples are tested for lead at the DOH Public Health Lab in Shoreline WA.

- Lead test results are reported by the lab to the LISDW Program typically within 10 business days.

- Results from the lab are matched with school building faucet and fixture information in DOH data system.

- Results are shared with OSPI to post to ICOS one week prior to sending test results to school district superintendent, point of contact for sampling event, LHJ environmental health contact, DOH Office of Drinking Water, and OSPI/Morgan Powell.
Resources

- DOH Technical Guidance
- DOH Program Email: Leadfreekids@doh.wa.gov
- DOH Lead in School Drinking Water Website
- Legislation: Chapter 28A.210.410 RCW; Chapter 43.70.830 RCW
- OSPI Remediation Funding and Information: Morgan Powell, OSPI, at morgan.powell@k12.wa.us.
Drinking Water Testing in Schools: Overview

Facilities with construction, or all plumbing replaced before 2016, require drinking water (DW) testing.

School DW test locations are premised upon the most recent data within OSPI’s Information and Condition of Schools (ICOS).

It is critical to update building changes, as-builts, and/or capital projects through your District’s ICOS portal to verify current drinking water test locations.
Drinking Water Testing in Schools: Overview

While some changes are seemingly innocuous, minor changes may alter testing when different from previous facility plans:

• Any building changes requiring permitting
• Addition of bottle fillers locations
• Removal or blocked service to DW locations
• Counter/sink revisions in elementary classrooms, kitchens, food prep classrooms
Drinking Water Testing in Schools: Recommendations for your school

Designate staff to assist who:

• Can communicate to administrators, board and staff regarding DW testing
• May coordinate with multiple facilities
• Have access to open building(s) for testing
• Familiar with all room spaces
• Have room/plumbing maps ready prior to testing
Drinking Water Testing in Schools:
Recommendations for your school

Designate staff to assist who:

• May remain with the testing agent or contractor during sampling event

  ➢ Review school district policy requirements for visitor sign-in/out procedures; acknowledge presence with office staff

  ➢ Refrain from providing test personnel unrestricted access with building proximity card and/or keyed access
Drinking Water Testing in Schools: Recommendations for your school

Identify drinking water locations that will not remain in service prior to testing:

- Cap and block non-potable drinking water sources, or;

- Make conspicuous and durable signage at non-potable locations indicating:

  “For hand-washing use only”
Drinking Water Testing in Schools: Recommendations for your school

Photo courtesy of ESD101
Drinking Water Testing in Schools: Recommendations for your school

Drinking water locations that remain in service prior to testing:

• Identify building changes, repairs, or fixtures changes that have occurred since last DW testing in preparation for conversation with DOH sampler before sampling event.
Drinking Water Testing in Schools: Recommendations for your school

Drinking water locations that remain in service prior to testing, continued:

- Repair any leaking water outlets or connections

- Do not flush test locations prior to sampling, unless implementing a follow-up draw
Drinking Water Testing in Schools: Recommendations for your school

Drinking water locations that remain in service prior to testing, continued:

• Suggest clearing test areas of clutter, instructional, and prep materials

• For initial, first draw samples, drinking water should rest at least 8 hours, but not more than 18 hours
Drinking Water Testing in Schools: Recommendations for your school

Photos courtesy of ESD101
Drinking Water Testing in Schools:
Testing your school

• Communicate where and when school staff will meet test personnel

• Sample collection must occur before the facility opens and any water is used in the building

• Things you may need to have:
  ➢ Floor maps, previous test results if available
  ➢ To document areas of concern - camera, notepad, radio
  ➢ Tools – flashlight, screwdriver, pliers, and other supplies
Drinking Water Testing in Schools: Testing your school

• Standard testing protocol starts in kitchen first, then move through building in manner to stay ahead of people entering building and using a fixture.

• Avoid plumbing maintenance when conducting water draws – i.e. cleaning faucet screens, adjusting packing nuts, etc.
Drinking Water Testing in Schools: After Testing your School

• Document any problem issues found during testing for future correction

• Confirm with test personnel, correct School District and Local Health Jurisdiction contact information

• Notify school administrators of test completion and pending analytical results
## Drinking Water Testing in Schools: After Testing your School

<table>
<thead>
<tr>
<th>Lead Concentration</th>
<th>Action Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 ppb or less</td>
<td>Continue normal use of the fixture</td>
</tr>
<tr>
<td>6 ppb to &lt;15 ppb</td>
<td>Implement action plan, routinely flush affected fixtures, clean aerators, prioritize replacement</td>
</tr>
<tr>
<td>15 ppb or greater</td>
<td>Remove fixture from service, follow DOH/LHJ advice, retest after corrective measures</td>
</tr>
</tbody>
</table>
Drinking Water Testing in Schools: Conclusion

• All schools must prepare to make testing results publicly available when received.

• Each School with a DW location that exceeds the 5ppb threshold will require an Action Plan by the District establishing an outline for remediation.

• Specify a Scope of action, Revision Date, DW fixture type for testing, and your School District for Board approval.
Questions?
Drinking Water Testing in Schools

In cooperation with:
WA DOH Lead in School Drinking Water and
Puget Sound Workers’ Compensation Trust and
Unemployment Pool

www.esd101.net

Jerry Page IH/CIE
jpage@esd101.net
509-789-3518
Worker’s Compensation: Safety
To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.
AVAILABLE MEMBER SERVICES

**Worker Compensation Trust**
- Claim Intake / Reviews / Investigation
- Compensability Determination
- Disability Management / Vocational Rehabilitation
- Exposure Analysis
- Incident Reporting
- Legacy Claims Management
- Industrial Hygiene
- Litigation Management
- Loss Control and Prevention
- Management Reporting
- Medical Cost Management
- Return-to-Work Planning

**Unemployment Pool**
- Claim Management
- Compliance Management
- Legislative Updates
- Management Reporting
- Review, Hearings, Appeals
- Training & Education
CONNECTING WITH PSESD

PSESD on Facebook
PSESD Twitter
PSESD LinkedIn
PSESD YouTube Channel

WWW.PSWCTUP.ORG
800 Oakesdale Ave SW Renton, WA 98057
425-917-7600
**UPCOMING TRAININGS**

**Drinking Water Testing in Schools**
- Presenters: Jerry Page, Industrial Hygienist at ESD 101, Theresa Sanders and Terri Veazey, Environmental Lead Exposure Prevention Program at DOH
- Date: February 16, 2023
- Time: 10:00AM – 12:00PM
- Location: Teams Webinar
- Register Here

**Return-to-Work Program: Overview and Benefits to Member Districts**
- Presenters: Aliza Hauser, MA, CRC, PHR, and Christian Porter, BA at PSWCT/UP
- Date: March 09, 2023
- Time: 10:00AM – 12:00PM
- Location: Teams Webinar
- Register Here

**Trauma Informed Management of Escalated Student Behavior and Self-Care Strategies for Educators**
- Presenter: Tovah Denaro, Founder and Consultant at Innovative Behavior Consulting
- Date: April 13, 2023
- Time: 03:00PM – 05:00PM
- Location: Teams Webinar
- Register Here

**Reasonable Assurance Training**
- Presenter: Brad Jones, Attorney at PSWCT/UP
- Date: April 20, 2023
- Time: 01:00PM – 02:30PM
- Location: Teams Webinar
- Register Here

**Return to Work Incentive Program Relaunch Announcement**
- Presenters: Aliza Hauser, MA, CRC, PHR, and Christian Porter, BA at PSWCT/UP
- Date: April 27, 2023
- Time: 10:00AM – 12:00PM
- Location: Teams Webinar
- Register Here

**Risk Management 101: Top 5 Emerging Trends in Schools**
- Presenters: Jessica Guy, GSP, CSR, Steve Lyons, ASP, CSR, at PSWCT/UP
- Date: May 11, 2023
- Time: 10:00AM – 12:00AM
- Location: Teams Webinar
- Register Here
We appreciate your time and participation!

We invite you to complete the post-event survey.

Your feedback will inform our efforts to continually enhance the value of these events!