Washington State Department of Health

Lead in the Spotlight

PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND HEALTHIER COMMUNITY

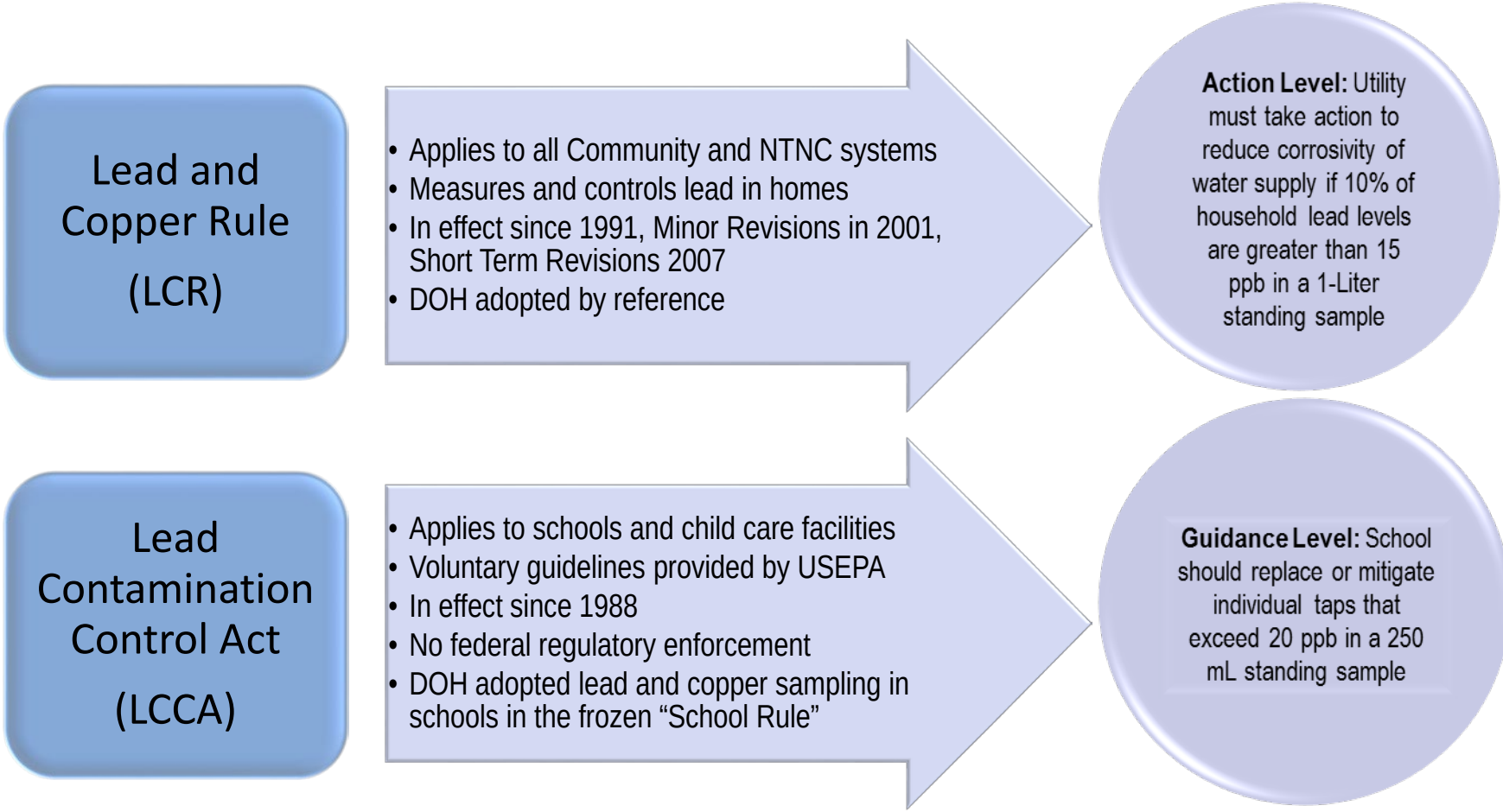
Office of Drinking Water Mission

We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.

What are we going to Discuss

- Overview of federal requirements for lead in water
- How lead & copper get into drinking water
- The Lead & Copper Rule
- The lead sampling in “School Rule”
- Governor’s Directive

What are the Regulations for Lead in Drinking Water?



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What Does "Lead Free" Really Mean?

1986 SDWA Lead Ban

- Requires use of "lead-free" pipe, solder, and flux in any plumbing providing water for human consumption
- Before the ban, solder used in plumbing typically contained 50% lead
- Banned use of fixtures that were not "lead-free" after June 19, 1986
- Revisions banned sale of fixtures that were not "lead-free" after August 6, 1998

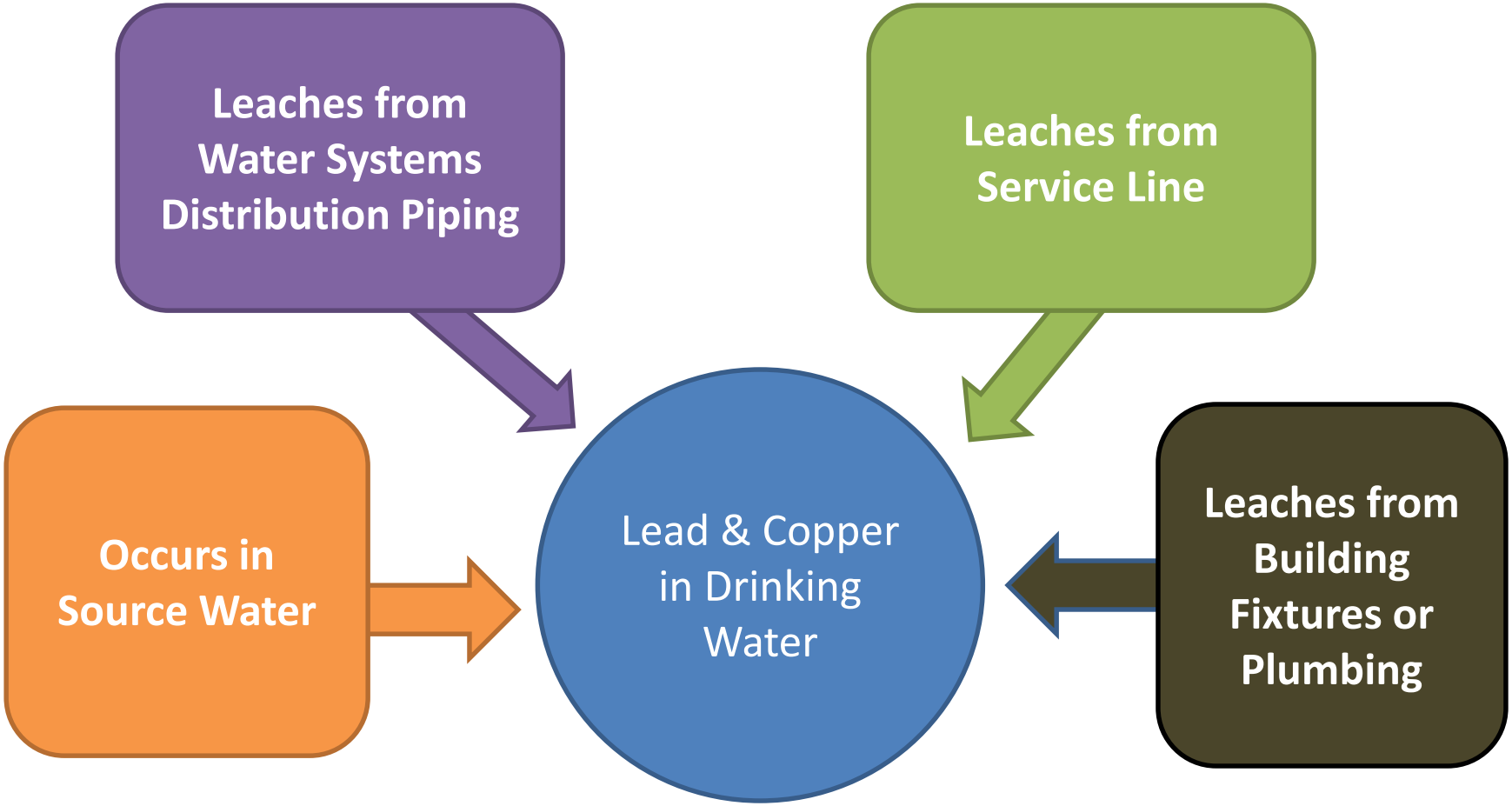
Lead Free Components: contain up to 8% lead
Lead Free Solder: contains up to 0.2% lead

Reduction of Lead in Drinking Water Act

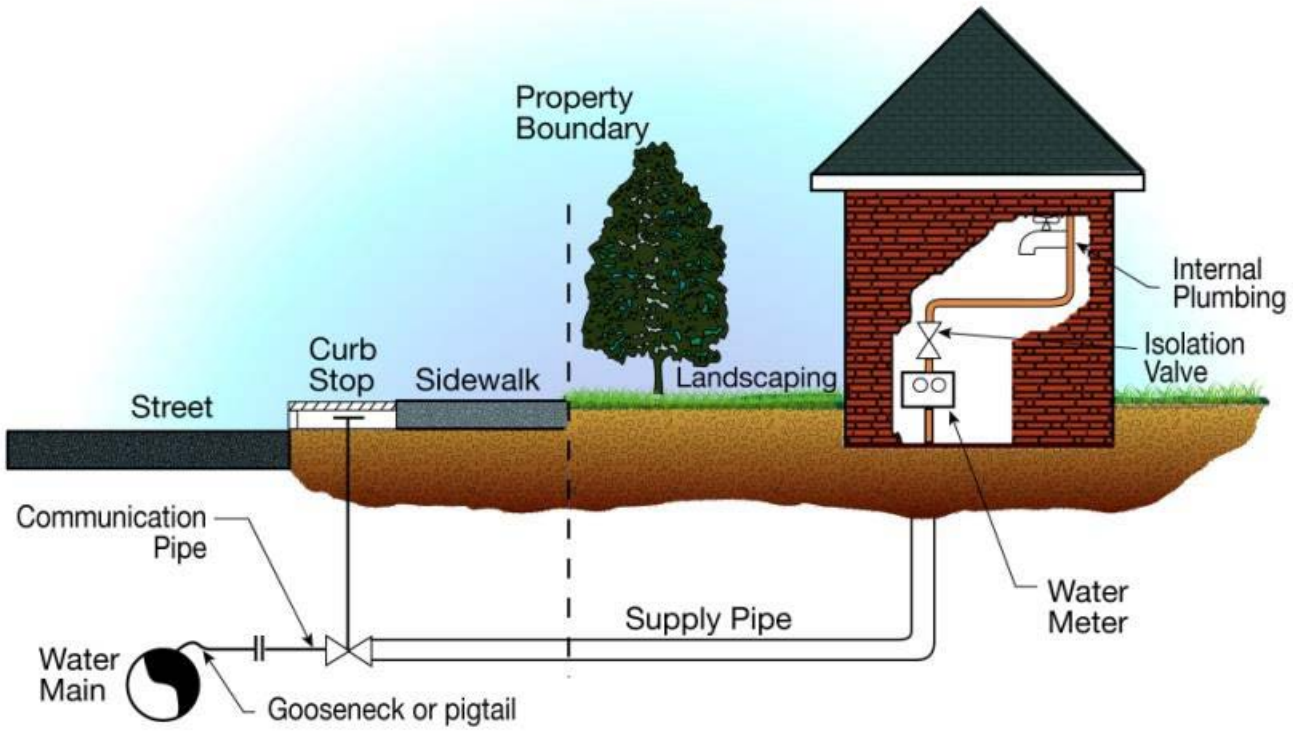
- Effective January 4, 2014
- Changes the definition of "lead-free" pipe
- Did not change the definition of "lead free solder or flux"
- Mainly affected brass or bronze components
- Look for products listed as NSF/ANSI 61G or NSF/ANSI Standard 372

Lead Free Components: Weighted average of less than 0.25% for surfaces in contact with potable water

Sources of Lead & Copper in Drinking Water



Typical Water Service Connection

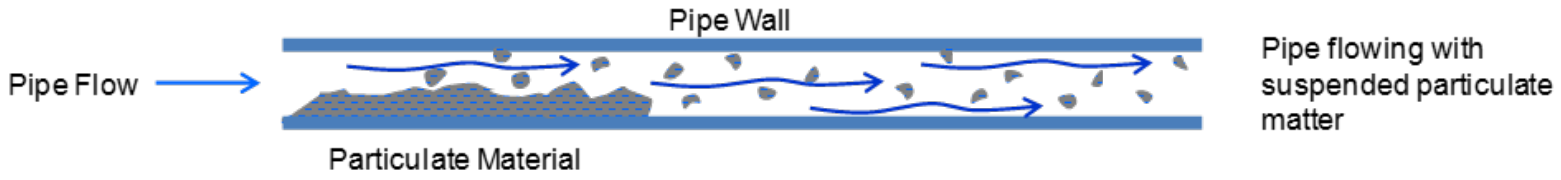


Source: US EPAs Optimal Corrosion Control Treatment Evaluation Technical Recommendations for Primacy Agencies and Public Water Systems (2016)

Soluble vs Particulate

Soluble lead & copper is caused by leaching from lead or copper-containing materials due to water stagnation

Particulate lead & copper is caused by scouring or descaling of the pipe walls



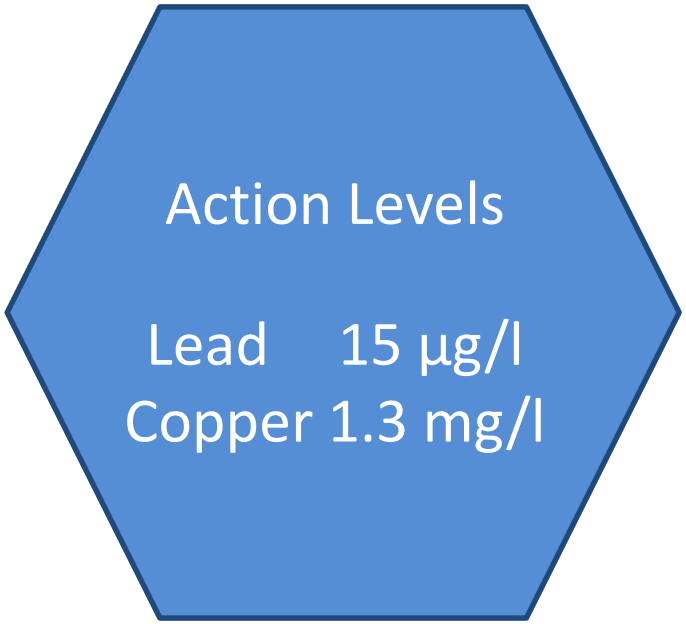
Flushing/Sampling Flow

Source: Cornwell et al., Water Research Foundation, in publication

Lead & Copper Rule

Regulates amount of lead and copper in individual homes

No more than 10% of samples can exceed the action levels



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Action Level vs MCLG vs MCL

Action Level – **not** a health based level – level you must take an action

MCLG – health based level, level of a contaminant that may be present with no adverse health effects

MCL – health based level, set by the EPA based on the MCLG, treatment technology available, ability to measure the contaminant at MCLG level, and analysis of treatment cost –vs– public health benefits

PWS Lead & Copper Samples

Target most susceptible, single family homes based on Tiering criteria defined in LCR ("newer" lead used in solder and lead service lines)

Regularly used cold water kitchen or bathroom faucets used for consumption

Collect first-draw samples after water has set in pipes for minimum of 6 hours, but no more than 12 hours

1 liter sample bottles

Tiers for Community Systems

Tier 1 – Single Family Homes
Copper pipes with lead solder installed 1983-1986
Served by lead service lines (50% of sites)

Tier 2 – Multifamily buildings
Copper pipes with lead solder installed 1983-1986
Served by lead service lines

Tier 3 – Single Family Homes
Copper pipes with lead solder installed before 1983

Optimal Corrosion Control

Systems serving ≤ 50,000 persons

Optimized if 90th percentile of taps samples meet the lead and copper action levels

Optimal Corrosion Control

Systems serving > 50,000

Conduct a corrosion control study and install treatment as recommended. Water quality control parameters are set that represent optimal corrosion control; or

The difference between the lead 90th percentile concentration and the highest source water lead concentration in less than the PQL (.005mg/L) and meets copper action level

Action Level Exceedances

- System must conduct corrosion control steps
- Must conduct public education if lead exceeded

Corrosion Control Steps

1. Sampling
2. Recommendation Step
3. Corrosion Control Study (if required)
4. Treatment Design and Approval
5. Treatment Installation
6. Follow-up Monitoring
7. Set Optimal Water Quality Parameters (OWQP)
8. Operate System within OWQP

“Sampled Out” What Does It Mean?

A system with ≤ 50,000 people can optimize by:

- Meeting the action level in two consecutive 6 months sample sets
- We require the systems to include their previous high sample locations in these sample sets

Types of Corrosion Control Treatment

pH, Alkalinity, & DIC Adjustment

Calcite contactors, caustic soda, soda ash, potash, aeration

Corrosion Control Inhibitors

Orthophosphate, polyphosphate, silicate

What is the School Rule?

Chapter 246-366 WAC – Rule currently being implemented – no water quality sampling requirements

Chapter 246-366A WAC – Adopted by the State Board of Health in 2009

“Adoption” and “implementation” are not the same – This rule cannot be implemented in whole or part until funding is provided

School Water Sampling Requirements

There is currently no requirement for a school to test for lead or copper under the school rule!

*School that is its own PWS in regulated under the LCR

**DOH has been directed to submit a funding package for implementation of the lead portion of the school rule

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What If a School Wants to Sample Now?

If a school or district wants to conduct sampling, direct them to our website for Lead in Schools and the EPA *3Ts for Reducing Lead in Drinking Water in Schools*

https://www.epa.gov/dwreginfo/3ts-reducing-lead-drinking-water-schools-revised-technical-guidance

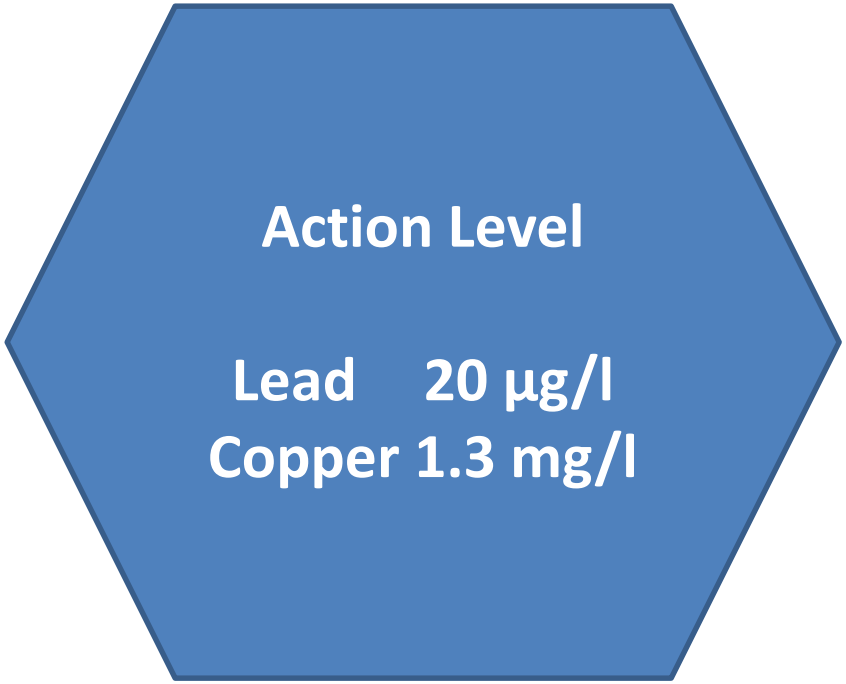
Testing Correctly Is Key

Common Testing Mistakes:

1. Testing during breaks or after weekends
2. Removing aerators or turning off fixture at the wall
3. Testing unused fixtures
4. Testing fixtures not used for consumption
5. Incorrect flushing procedures
6. Using the wrong bottle size

School Rule Lead & Copper

Focus on amount of lead and copper from individual fixtures



Lead & Copper Samples in Schools

Targets individual fixtures used for drinking or cooking

Collect initial first-draw samples after water has set in pipes for minimum of 8 hours, but no more than 18 hours

250 ml sample bottle

Follow-up samples are collected from sources where the initial tap samples are greater than 20 ppb. Directions are specific to the type of fixture

Lead Sampling Requirements in the "School Rule"

Elementary schools must sample:

- All plumbing fixtures regularly used for drinking or cooking

Middle schools & high schools:

- 25% of plumbing fixtures regularly used for drinking or cooking

School Actions After Lead Exceedance

- Immediately shut off or make the fixture inoperable
- Manual flush as a temporary remedy – if this is used the school must take a flushed samples to determine how long the fixture must be flushed to reduce lead under 20 ppb
- Install automatic flushing
- Fixture replacement or
- Install corrosion control treatment (this makes the school a PWS)

Governor's Directive

May 2, 2016

Governor Inslee directed an increased effort to reduce lead exposures in Washington State

DOH must report no later than October 2016 potential budget and policy recommendations

Directed DOH to

1. Prepare a decision package to implement at least the lead portion of the “School Rule”
2. Determine viability and potential policy change to Lead Rental Inspection and Registry Program to require properties built before 1978 to register and complete lead inspection at a change in occupancy

Directed DOH to

3. In collaboration with Department of Early Learning, assess policy changes to require childcare providers located in buildings built before 1978 to complete evaluations for lead exposure including testing of drinking water
4. Improve the blood level monitoring system and ensure full implementation of public health outreach to families having blood lead levels greater than action level

Directed DOH to

5. Work with Health Care Authority to improve lead screening rates to children at highest risk
6. Prioritized the removal of lead service lines and other lead components in drinking water distribution systems
    a. Identify all lead service lines and lead components within 2 years
    b. Remove all lead service lines and lead components within 15 years

Questions?

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