



# Lead Service Line Replacement Program Semi-Annual Report

January 24, 2024

Public Works Committee

Common Council File #231480






# Lead Basics

- Lead is a toxic substance
- Lead exposure is cumulative
- There is no safe exposure to lead
- Young children are particularly vulnerable
- Goal is to remove ALL sources from the community
  - Lead-Safe Milwaukee: <https://city.milwaukee.gov/LeadSafeMKE>
    1. Safe Paint
    2. Safe Water: Lead Service Line Replacement (LSLR) program
    3. Safe Kids





Lead-Safe Milwaukee  
SAFE PAINT SAFE WATER SAFE KIDS

Learn About Lead   Lead-Safe Easy as 1-2-3

CONTACT US   VERSION EN ESPAÑOL

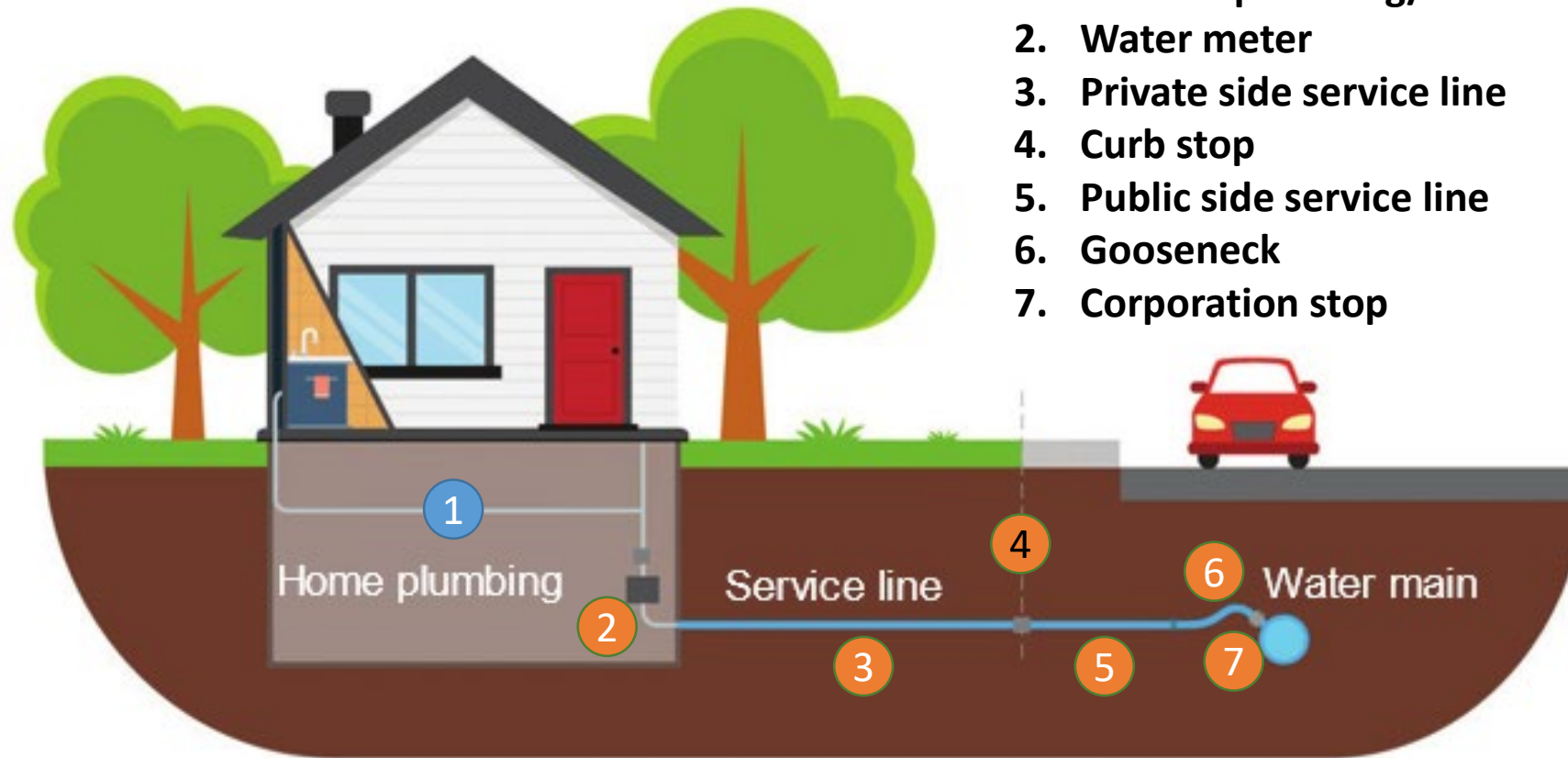
There are several sources of lead you should know about. The most common way children are exposed to high levels of lead is through chipping, peeling or cracking lead-based paint in older homes. When lead is found in drinking water, it is usually because water can dissolve the lead in pipes and plumbing. What can you do to protect your family?

1  
Safe Paint:

2  
Safe Water:

3  
Safe Kids:

# What is a lead service line?



## *Lead in water reduction efforts*

- 1951 MWW installed last public-side lead service line (LSL)
- 1962 City ordinance requiring private side copper
- 1985 Reconnection to LSL prohibited for new construction
- 1996 Corrosion Control Treatment (orthophosphate) implemented
- 1997 MWW compliance with Lead and Copper Rule
- 2015 MWW pilot study to assess lead in water
- 2016 MWW began replacing, rather than repairing, LSLs
- 2017 Lead Service Line Replacement Program established
- 2019 Corrosion Control Treatment (CCT) Reevaluation of Optimization
- 2020 Lead and Copper Rule (LCR) Compliance Sampling
- 2021 LCR Revisions published and go into effect late 2024
- 2022 Designation of optimal corrosion control treatment by WI DNR

# *Lead service line replacement mandate*

- As of January 1, 2017, full lead service line mandated to be replaced with copper when:
  - A leak or failure has been discovered on either the privately- or utility-owned portion
  - The utility-owned portion is replaced on either a planned or emergency basis
  - The property is a child care facility (licensed or certified) or school
- REPAIR or RECONNECTION to lead service line PROHIBITED
- Property owner may initiate replacement of privately-owned portion at their own expense with which MWW will pay for and replace the utility-owned portion

# LSL Replacements and Filter Distribution (2017-2024)

Reason for LSL Replacement	2017	2018	2019	2020	2021	2022	2023	Total (%)
Leak or failure	437	547	670	629	508	558	643	3992(61)
Child cares and schools	150	204	129	48	67	77	98	773 (12)
Water main relay project	18	143	177	162	198	152	40	890 (13)
Owner initiated	11	39	23	24	27	30	26	180 (3)
Other infrastructure projects	6	0	1	25	186	174	321	713 (11)
<b>Total LSL Replacements</b>	<b>622</b>	<b>933</b>	<b>1000</b>	<b>888</b>	<b>986</b>	<b>991</b>	<b>1128</b>	<b>6548 (100)</b>
<b>Total Filter Distribution</b>	<b>1164</b>	<b>1359</b>	<b>1417</b>	<b>970</b>	<b>971</b>	<b>875</b>	<b>1271</b>	<b>8027</b>

## *Lead service line financial impact*

- 5 year average full replacement cost as of December 31, 2023: \$8,972
  - Private side: \$4,358
  - Public side: \$4,614
- One- to four-family residential property cost share eliminated for mandated replacements as of January 4, 2024
- 2024 Budget – 2200 Replacements
  - 1,000 equity prioritized locations (administered by Owners Representative)
  - 550-600 planned projects (included with water main replacement, prior to pavement reconstruction, coordinated with sewer lateral replacement)
  - 500-550 leak or failures
  - 50-75 licensed child care facilities
  - Owner request option subject to capacity (owner responsible for private side cost)

- Spring 2024 mailing to provide information on new Owner Request option
  - Webportal signup at: [Milwaukee.gov/Water/WaterQuality/Lead and Water](https://Milwaukee.gov/Water/WaterQuality/Lead%20and%20Water)
- Lead-safe information provided with filter pitchers
- Semi-annual insert with lead safety information in municipal service bills
- Annual mailing of lead safety information to properties
- Consumer Confidence Report bill insert with lead and water information
- Online public-side LSL inventory updated quarterly
- Information provided via MWW Customer Service
- Website
  - [city.milwaukee.gov/Water](https://city.milwaukee.gov/Water) “Lead and Water” in English and Spanish
  - [city.milwaukee.gov/LeadSafeMKE](https://city.milwaukee.gov/LeadSafeMKE)
  - [city.milwaukee.gov/Leadsafemke-espanol](https://city.milwaukee.gov/Leadsafemke-espanol)
- Lead-Safe brochures, English and Spanish, available at MHD Health Centers, MPL branches, City Hall complex buildings



# Customer outreach



OUR RECORDS INDICATE THE WATER SERVICE LINE  
THAT CONNECTS YOUR PROPERTY TO THE WATER  
MAIN IN THE STREET IS MADE OF LEAD.

## Milwaukee Water Works

Zeidler Municipal Building  
841 N. Broadway, Room 409  
Milwaukee, WI 53202

Reduce the risk of exposure to lead in drinking water from lead service lines and interior plumbing and fixtures.

Households with lead service lines whose occupants include these at-risk persons should drink and cook with tap water filtered with an NSF 53 certified filter:

- Children under 6, especially bottle-fed infants



NUESTROS RÉCORDS INDICAN QUE LA LÍNEA DE SERVICIO DE AGUA QUE  
CONECTA SU PROPIEDAD A LA LÍNEA PRINCIPAL DE AGUA DE LA CALLE ESTÁ  
HECHA DE PLOMO.

Reduzca el riesgo de exposición al plomo en el agua potable de las líneas de servicio de plomo y tubería y accesorios de plomo.

Los hogares con líneas de servicio de plomo cuyos ocupantes incluyen a personas en riesgo, dichas personas deben beber y cocinar solamente con agua del tubo filtrada por un filtro certificado NSF 53:

- Niños menores de 6 años, especialmente los infantes alimentados en botella
- Mujeres embarazadas o que podrían quedar embarazadas (edades 15-45)
- Mujeres en período de lactancia

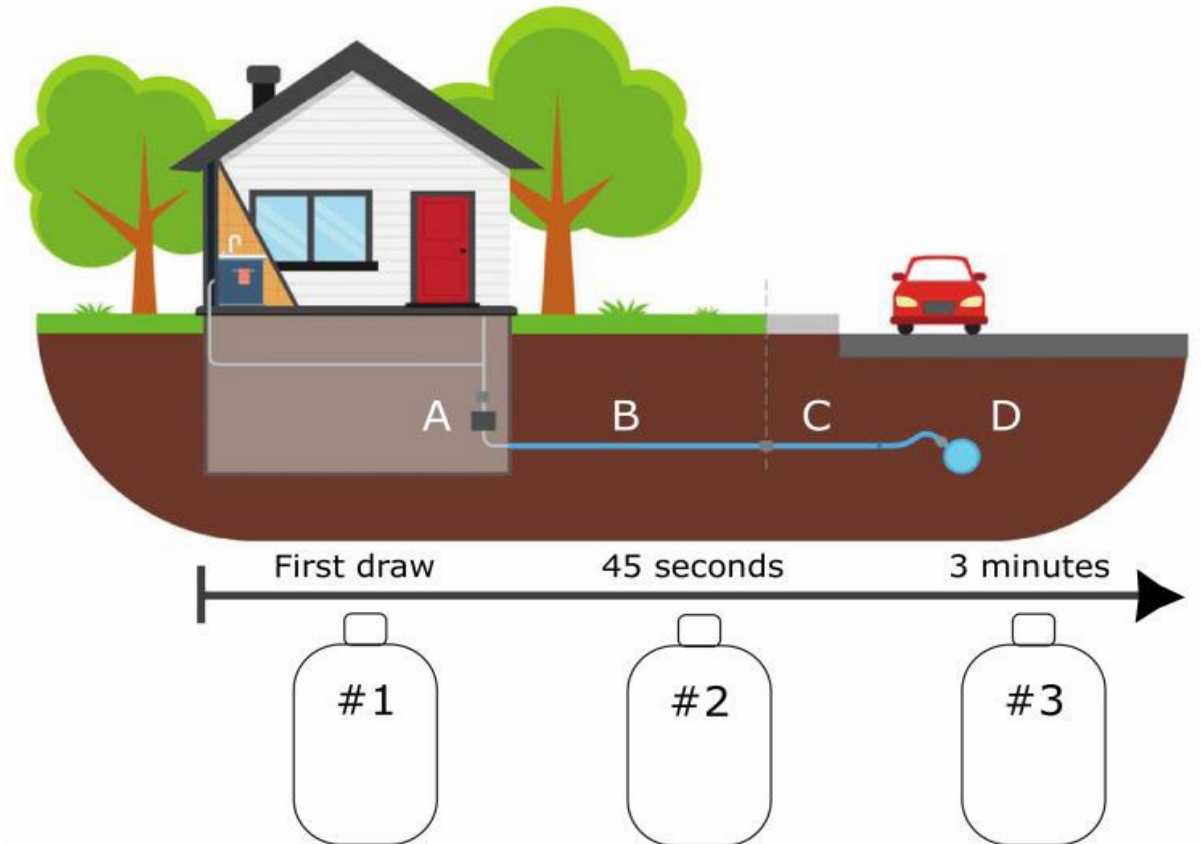
Estos clientes podrían ser elegibles para un filtro gratis de parte del Departamento de Salud de Milwaukee.

Para todos los que tienen una línea de servicio de plomo:

- Beba y cocine solamente con agua del grifo de agua fría.
- Deje correr el agua hasta que esté fría antes de usarla para beber o cocinar.
- A menudo desatornille y lave la pantalla al final de cada grifo.
- Enjuague la tubería del hogar al final de cada día de trabajo durante el reemplazo de la tubería principal, la reconstrucción de la calle y del alcantarillado y trabajo de plomería. Los clientes afectados inmediatamente por ciertos proyectos de construcción de la Ciudad reciben un cupón de parte de Milwaukee Water Works.



# Lead Testing – 3 Bottle Protocol



## Sample 1:

Represents your home plumbing: everything from inside the faucet to the water meter (A).

## Sample 2:

Represents your private service line (B) and the public service line (C).

## Sample 3:

Represents the water coming from the public water main (D).

## July - December 2023 Lead Testing Updates

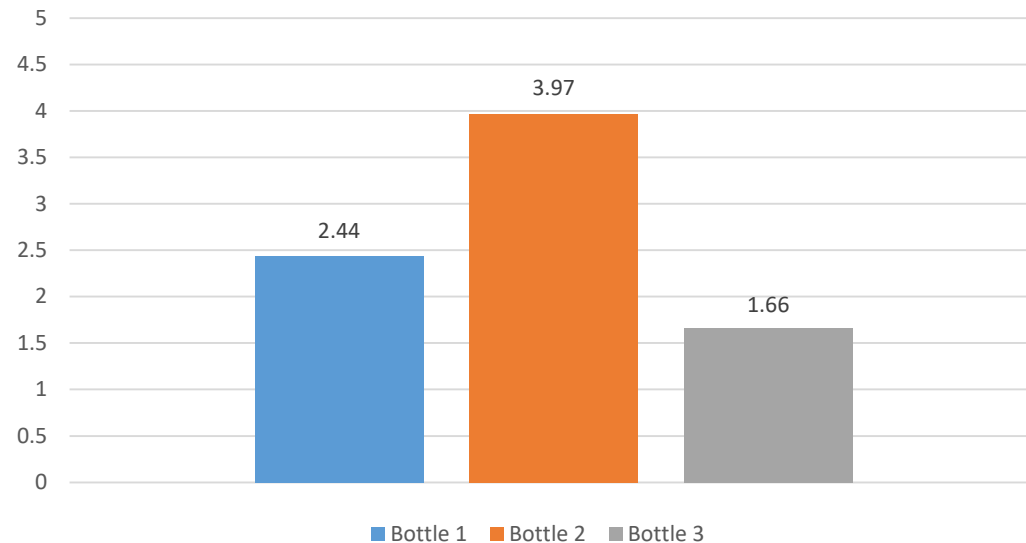
# of Lead Tests	Pre-LSLR	Post-LSLR	Total
Residences	45	117	162
Childcares	18	6	24
Total	63	123	186

- 186 samples tested for lead (60 properties + re-tests)
- One property > 15 ppb
  - Post LSLR (same property below 15 ppb before LSLR)
  - Asked customer to clean aerators and flush to clear construction debris
  - Re-tested (after recommending flush) twice
  - Third test results: all 3 bottles were below 2 ppb

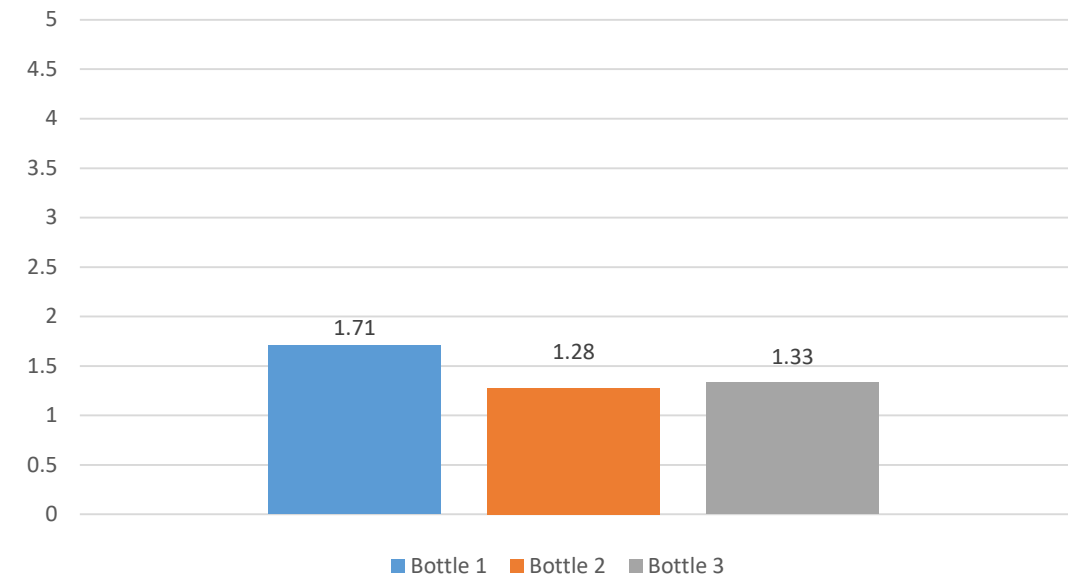
## July - December 2023 Lead Testing Updates

- Pre-LSLR results slightly higher than post-LSLR on average
- Pre-LSLR results highest in bottle #2 (represents LSL)
- All pre-LSLR testing below 15 ppb action level
- Post-LSLR results highest in bottle #1 (represents internal plumbing)
- Average lead concentrations were below 5 ppb, even with a LSL

July-December 2023 Pre-LSLR Lead Testing (average)



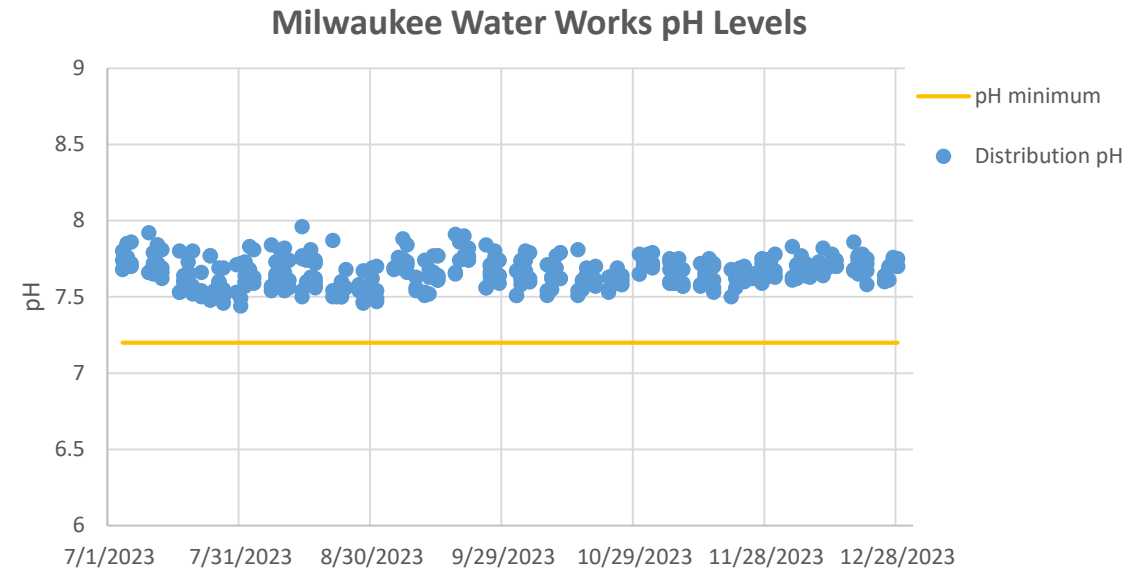
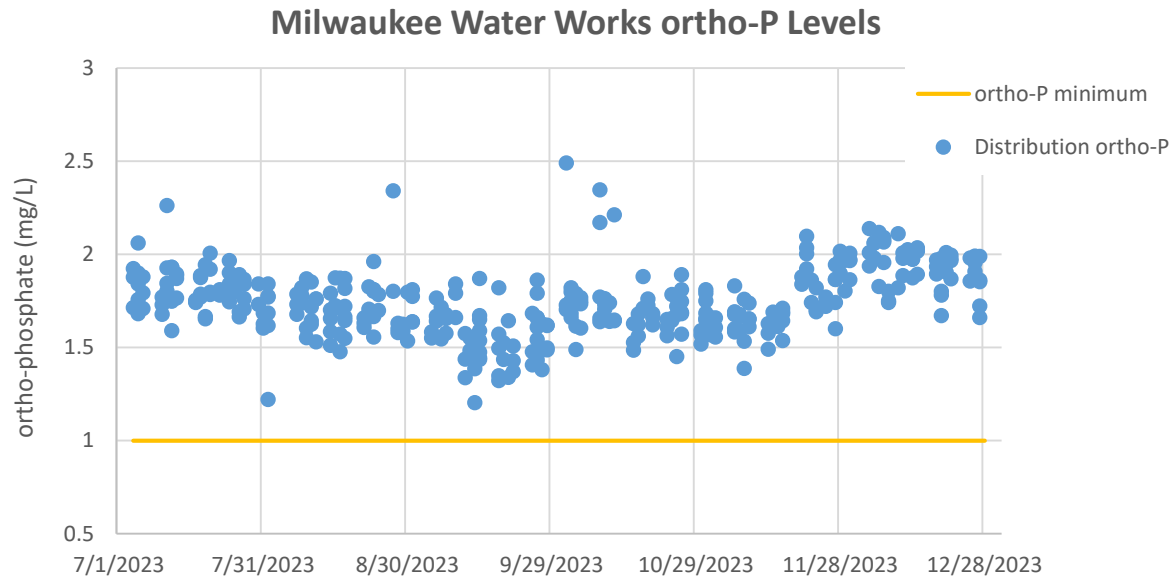
July-December 2023 Post-LSLR Lead Testing (average)





## July - December 2023 Optimal Water Quality Parameter Results

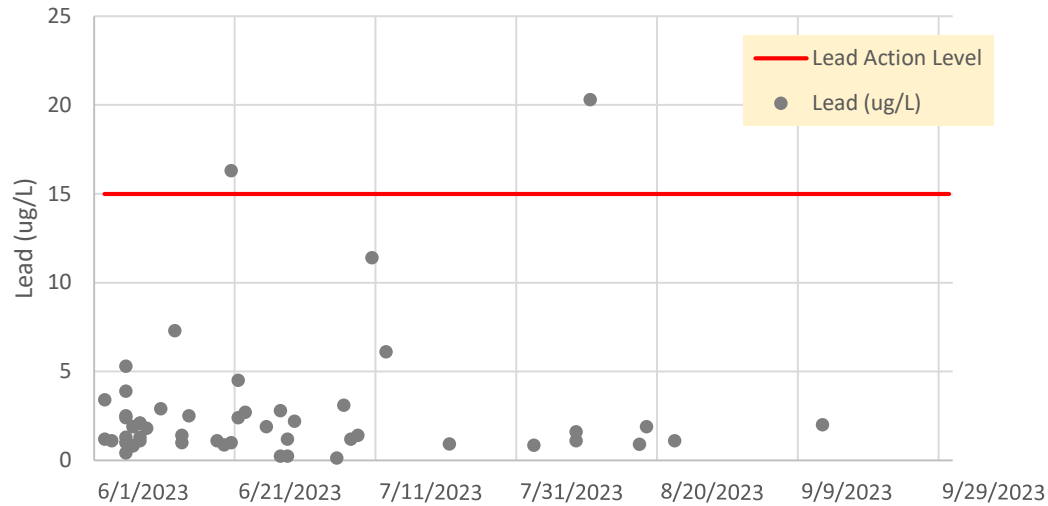
pH and orthophosphate (ortho-P) are monitored closely to prevent corrosion of lead service lines and lead internal plumbing



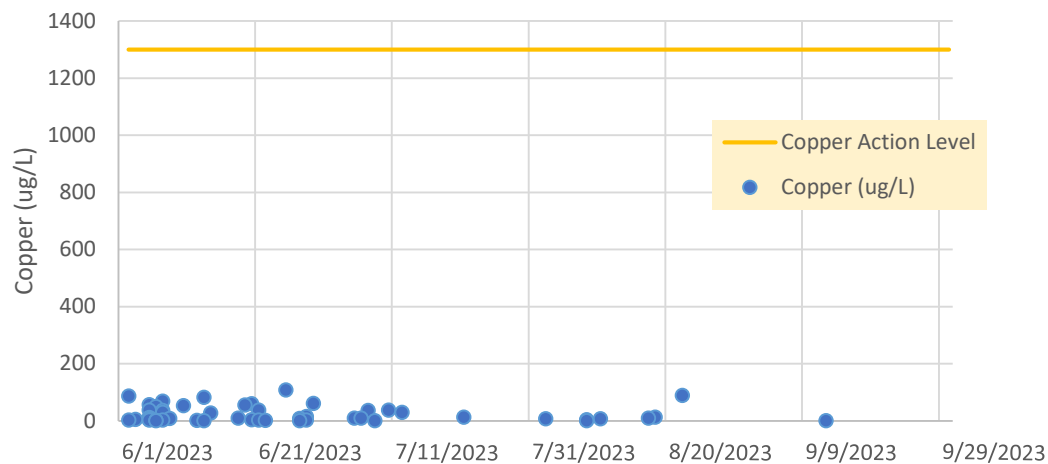
Alkalinity around 105 mg/L also helps to prevent corrosion

# 2023 Lead and Copper Rule Compliance Sampling Update

2023 LCR Compliance Testing - Lead



2023 LCR Compliance Testing - Copper



## Lead and Copper Rule

- Once every 3 years (may change with LCRI) – **2023: June 1<sup>st</sup> through September 30<sup>th</sup>**
- Minimum of 50 samples from customer taps – 51 ✓ (kitchen or bathroom sinks)
- Must have lead service line with no filter
- First draw sample (5<sup>th</sup> liter starting soon)
- Analyzed for lead and copper
- Compliance based on 90<sup>th</sup> percentile
- Action levels: **15 ppb** for lead, **1300 ppb** for copper
- Two samples above 15 ppb lead – both customers contacted immediately

## *2023 Proposed Lead and Copper Rule Improvements Announced*

- Lead and Copper Rule first published in 1991
- Lead and Copper Rule Revisions (LCRR) published in 2021
  - Compliance required by Oct 2024
- EPA released proposed improvements to the LCRR (LCRI)
  - EPA plans to finalize by Oct 2024 – would result in a compliance date of Oct 2027
  - Requires all LSL replacements within 10 years of compliance date (estimated 2027-2037)
  - Requires annual inventory updates – emphasis on identifying services of unknown material
  - Lowers lead action level from 15 ppb to 10 ppb
  - Changes testing protocol – Test 1<sup>st</sup> and 5<sup>th</sup> liters, use highest for compliance
  - Increases outreach to consumers if there are multiple lead action level exceedances
  - Many additional requirements and changes:

<https://www.epa.gov/ground-water-and-drinking-water/proposed-lead-and-copper-rule-improvements>

- EPA allocations to State of WI
  - \$48.3M for Federal Fiscal Year (FFY) 2022 and \$81.2M for FFY 2023
  - Administered by the DNR through the Safe Drinking Water Loan Fund (SDWLP)-LSLR Program
    - Funds for FFY 2022 & 2023 are available for State Fiscal Year (SFY) 2024
  - 49% principal forgiveness; 51% low interest (0.25%) loans
  - FFY 2024-2026 allocations are expected to be \$81.2M
  - EPA funding is anticipated to last more than 5yrs
- WI DNR Safe Drinking Water Loan Program(SDWLP)-LSLR Program
  - Milwaukee qualifies for principal forgiveness (PF) funding per the state's disadvantaged criteria
  - \$30.1M SFY 2024 funding award issued in October (\$74.1M awarded statewide)
    - Replacements to occur from mid-2023 through 2024
    - Base Program (2,000) - \$19.7M (\$8.1M PF – private side)
    - Census Tract (1,000) - \$10.4M (\$8.0M PF – private side & part of public side)
  - SFY 2025 Intent to Apply submitted in October 2023
    - 3,000 replacements (1,200 city wide and 1,800 census tract)



- Prioritize replacements by census block group utilizing three factors
  - Area Deprivation Index (ADI) – 70% weight
    - UW School of Medicine and Public Health Center for Health Disparities Research
  - Incidences of Elevated Blood Lead Levels (EBLL)(5 mcg/dL) – 25% weight
  - Density of LSL's – 5% weight
  - Assign a score to each census block group to create a prioritization order
  - Acknowledge the geographic disparities in the City
    - Approximately 60% of LSL's, EBLL incidences, and census blocks that have ADI scores of 9 or 10 are on the north side
- Prioritization updated with 2021 ADI and 2021/2022 EBLL data.

- Increase the number of LSLR's by 1,000 in 2024 (2,200 total)
  - Retain an Owners Representative to administer the expansion program
    - All aspects from customer outreach to record updating and water testing
    - CDM Smith selected using a publicly advertised request for proposal (RFP) process
      - Contract language finalized
  - Additional increases in LSLR's in 2025 and 2026 to achieve goal of completing all replacements in 20 years
    - Goal of 3,500 beginning in 2026
    - Proposed LCR Improvements require all LSL replacements within 10 years of compliance date (estimated 2027-2037)

# *Ordinance Changes (Effective January 4, 2024)*

1. Eliminate the property owner cost share for residential properties with 1-4 dwelling units that are subject to a replacement requirement.
2. Provide property owners the opportunity to request a lead service line replacement within the city replacement program. An owner initiated replacement would not be eligible for the city cost subsidy.
3. Increase the length of time for a property owner who elects to have a city contractor complete a replacement to pay the special assessment for that work from 10 years to 15 years (this is the situation where the owner does not pay the entire invoice within 45 days and the special assessment is placed on the tax roll).
4. Reduce the timeframe to provide written notice of a planned replacement to the property owner from “at least 45 days” to “at least 10 business days”.
5. Reduce the timeframe for the owner to replace or elect city replacement for planned projects from “30 days” to “10 business days”.
6. Clarify the definition of “Lead water service line”.
7. Clarify the definition of “Privately-owned portion of a lead water service line”.
8. Specify prioritized service lines as planned replacements.
9. Establish the cost for owners who do not qualify for the City subsidy as the lessor of actual or the average current cost.

*Thank you*



Lead and Water Information

[Milwaukee.gov/Water/WaterQuality/Lead and Water](https://milwaukee.gov/Water/WaterQuality/Lead%20and%20Water)