



PORTSMOUTH WATER SYSTEM'S LEAD AND COPPER TESTING OVERVIEW



BY MASON CACERES





TALKING POINTS

- LEAD AND COPPER RULE OVERVIEW
 - BREAKDOWN OF COMPLIANCE REQUIREMENTS
 - FREQUENCY & QUANTITY OF COLLECTIONS
 - 2023 RESULTS
 - OUTREACH & FOLLOW-UP PROTOCOLS
 - EPA REVISIONS
- FREE LEAD TESTING OPPORTUNITY UPDATES
 - PROCESS STEPS
 - EXAMPLE OUTREACH & REPORTS
 - RESULTS THUS FAR

LEAD AND COPPER RULE (LCR)



- Sampling program required by the U.S Environmental Protection Agency (EPA) under the Safe Drinking Water Act (SDWA) and administered by NH Department of Environmental Services (NHDES)
- Accomplished through a collaboration between Portsmouth Public Works Water Department and our customers (dependent upon willing individuals to collect samples, within confines of site selection requirement).
- Requires community and non-transient, non-community water systems to conduct tests to determine if lead and copper are present in high levels at the consumer's tap. The action levels are 0.015 milligrams per liter (mg/L) or 15 ppb for lead and 1.3 mg/L for copper.
- Rule revisions published in 2021 – changes to existing rule take effect 10/16/24*

LCR CONTINUED

- ACTION LEVEL = measure of the effectiveness of the corrosion control treatment carried out by water systems. To check if corrosion control is working, EPA requires water systems to test for lead and copper at the tap in certain homes, including those with lead service lines.
- The concentrations of both lead and copper must be less than or equal to the action level(s) in at least 90% of the samples collected.
- If the 15 ppb AL for lead (or 1.3 ppm of copper) is exceeded, then the system is required to take actions such as public education & notification, optimization of corrosion control processes, increase monitoring, and continue replacing lead components in the distribution system.

Types of water pipes

Follow the guidance below or contact a licensed plumber to determine the material of your water pipes. To identify the material of your service pipe material on private property, check your household water service connection, typically located in the basement.

Homeowners should identify and replace old household pipes, particularly galvanized plumbing and sources of lead. The type of household plumbing can vary throughout your household.

Lead



A dull, silver-gray color that is easily scratched with a coin. Use a magnet - strong magnets will not cling to lead pipes.

Galvanized



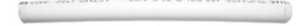
A dull, silver-gray color. Use a magnet - strong magnets will typically cling to galvanized pipes.

Copper



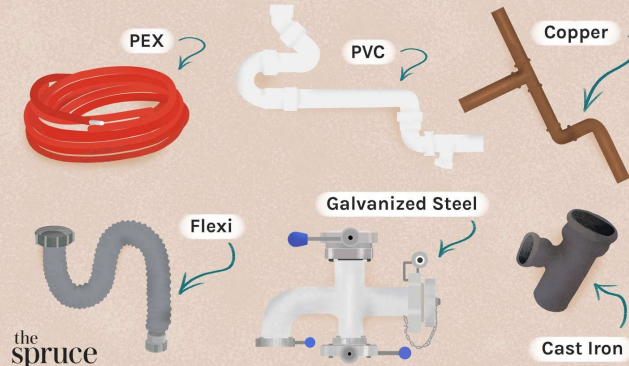
The color of a copper penny.

Plastic



White, rigid pipe that is joined to water supply piping with a clamp.

Main Types of Residential Plumbing Pipes



LCR Sample Sites Required	
Population	# Samples
>100,000	100
10,001 - 100,000	60
3,301 - 10,000	40
501 - 3,300	20
101 - 500	10
≤ 100	5

SITE SELECTION TIERS (based on 2021 revision)

- Tier 1 – Lead service line (LSL) Single Family
- Tier 2 – LSL Multi-Family Home
- Tier 3 – Galvanized requiring replacement
- Tier 4 – Lead solder pre-1986
- Tier 5 – Other representative site

LCR SAMPLING PROTOCOL

- Site selection process (tiered approach)
- Sample should be collected where water is used or consumed regularly such as your kitchen sink.
- Considered a “first draw” sample and is to be collected from the first water that flows from your sink following a 6-hour stagnation (no water use) period.
- Use a cold-water faucet for sampling. Sample at a tap NOT influenced by or hooked up to water softeners or filter systems if possible.

LEAD AND COPPER RULE - FREQUENCY & QUANTITY OF COLLECTIONS

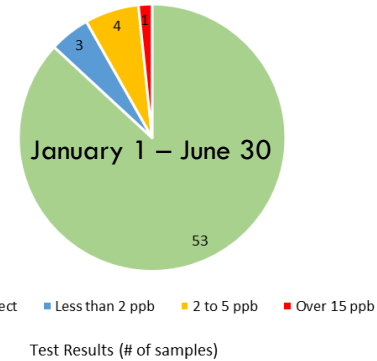
PORTSMOUTH WATER SYSTEM LEAD AND COPPER COMPLIANCE HISTORY

<u>Date</u>	<u>Sampling Frequency</u>	<u># Samples Collected & Analyzed</u>	<u>Lead 90th percentile (ppb)</u>	<u>Copper 90th percentile (ppm)</u>
July 2023	Semi-Annual	60	1	0.167
January 2023	Semi-Annual	61	1	0.244
2022	Annual	30	1	0.141
2021	Annual	31	2	0.238
2020	Annual	31	1	0.117
2019	Annual	32	0	0.205
July 2018	Semi-Annual	61	1	0.187
January 2018	Semi-Annual	62	1	0.162
2016	Triennial (once every 3 yrs.)	34	7	0.135
2013	Triennial (once every 3 yrs.)	30	1	0.110
2010	Triennial (once every 3 yrs.)	30	1	0.130
2007	Annual	30	5	0.185
2006	Annual	30	5	0.194
2005	Annual	30	13	0.239
July 2004	Semi-Annual	61	5	0.261
January 2004	Semi-Annual	61	13	0.291
July 2003	Semi-Annual	61	16	0.296
January 2003	Semi-Annual	60	12	0.252

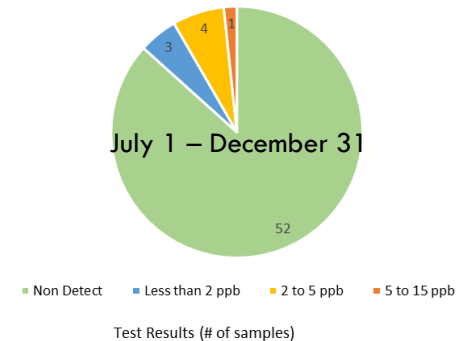
2023 LEAD AND COPPER RESULTS

- Open Excel summary of data
- Important to understand that corrosion control is not the ‘end all, be all’ solution to lead intrusion.
 - Must rid the system of lead, galvanized steel, and brass components (i.e. service lines)
 - **Identify your service line, internal plumbing, and fixture materials!**
- Not every sample was collected from a kitchen tap – implications with old fixtures and internal plumbing
- Low 90th percentile speaks to success of corrosion control treatment practices.

2023 Portsmouth Lead Monitoring Results -
Round 1



2023 Portsmouth Lead Monitoring Results -
Round 2



OUTREACH PROCESS

FOLLOWING EXCEEDANCE:

1. Phone call to homeowner within 24-hours of report retrieval. Current notification requirement is within 3 days of result.
2. Educate homeowner, confirm sample instructions were followed correctly, ask about age of home and any knowledge they may have relating to internal plumbing, fixtures, and filtration (if any).

LEAD COMPLIANCE SAMPLING PROGRAM SAMPLING LOCATION RESULTS

PWS Name: **Portsmouth Water Works**
PWS Town: **Portsmouth, NH**
PWS ID: **1951010**
LCR SITE ID: **<Site_ID>**

Dear <First_name>,

November 8, 2023

Thank you for your participation in the lead tap monitoring program. This letter is to report the lead results from the sample collected at your residence/place of business, <Site_Name_Proper_Case> on <Date_Collected>.

The lead level in your water sample is as follows:

LEAD: <Lead_Results_ppm> milligrams per liter (mg/l). This result is above / below the lead action level.

What Does This Mean?

The United States Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services (NHDES) set the **Lead Action Level¹ for lead in drinking water at 0.015 mg/l (or 15 ppb)**. Because lead may pose serious health risks, the EPA and NHDES also set a **Maximum Contaminant Level Goal (MCLG)² for lead of zero**.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If too much enters your body from drinking water, it can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Our public water system is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. More information on lead in drinking water and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at: <http://www.epa.gov/safewater/lead>

We recommend the following tips to keep any potential lead out of the water you drink:

- Most importantly – Flushing your water is the simplest way to reduce exposure to lead. When your water has been sitting for several hours, flush the tap until the water feels cold before use.
- Never use hot water from the faucet for drinking or cooking, especially when making baby formula.
- Never boil water to remove lead. Boiling water for an extended time may make the lead more concentrated.

For more information on lead in drinking water visit http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/lcrmr_index.cfm

If you have any questions regarding lead in drinking water or your lead sampling results, please feel free to contact: Albert Pratt, Portsmouth Water Supply Operations Manager at (603) 520-0622.

Sincerely,



Check box if applicable:

Copy of analytical report attached.

¹ The Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

² The Maximum Contaminant Level Goal (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

FOLLOWING EXCEEDANCE:

3. Schedule date and time to resample from original tap location, as well as fixtures closer to service line.
4. Submit collected samples to lab and follow-up with a diagnosis to homeowner.

KEY TAKEAWAYS FOLLOWING LEAD AND COPPER RULE REVISIONS (LCRI)

- Improvements to revision as of 11/30/2023 (600-page document published by EPA) – currently open for public comment.
- Preparation of publicly available inventory of service line materials and LSL replacement plans by October 16, 2024. Inventory must include utility and customer-owned and be categorized as either lead pipe, galvanized requiring replacement, lead-unknown, or non-lead.
- Replacement of 100% of LSLs and GRRs within 10 years.
- Verification of 100% of unknown service line materials within 10 years.
- Addition of lead connectors to the service line inventory.
- Improved tap sampling (evaluation of lead for both 1st and 5th liter).
- Lowering of lead action limit to 10 ppb.
- Additional outreach and required filter distribution for systems with more than 3 action level exceedances in a 5-year period.

FREE LEAD TESTING OPPORTUNITY

- Press release published October 5, 2023.
- More outreach:
 - Portsmouth Herald article - published 10/10
 - City Newsletters
 - Outreach post cards distributed during Lead Poisoning Prevention Week
- 38 responses to outreach - participants provided confirmation email with retrieval code.
- Only 17 have submitted their samples and received results.
- Leaves 21 people that have not followed through with collection process.

**FREE WATER TESTING
FOR QUALIFIED WATER CUSTOMERS**

The City of Portsmouth Water Division monitors for lead in drinking water in the Portsmouth and Pease Tradeport Water Systems to make sure there is no detectable lead in the City's supply. However, buildings with old plumbing systems could have lead components that may leach lead into tap water. Lead is particularly harmful for children under 6 years old.

PORTSMOUTH WATER CUSTOMERS MAY QUALIFY FOR FREE TESTING
The City is contracting with an accredited laboratory to provide one sample kit (per residential customer) to test for lead in drinking water for customers served by the Portsmouth and Pease Tradeport Water Systems.

HOW CAN I TAKE ADVANTAGE OF THIS OPPORTUNITY?
Contact Mason Caceres, Water Quality Specialist II, at (603) 312-3804 or mecaceres@cityofportsmouth.com for a one-time code that will allow you to obtain a sample kit. Detailed instructions will be provided.

* The city has budgeted \$2,500 for this program. Kits will be distributed while supplies last.




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PROCESS BREAKDOWN

1. Interested homeowner/tenant emails me, providing address and contact information
 - Make sure the property is connected to our system, and that the property does not have an associated confirmation code already
 - Gather information on service line material, property type, property age, how they heard about the opportunity, etc.
2. Respond to participant with email template describing further instructions and retrieval code
 - Entire email must be shown to laboratory receptionist to pickup sample kit
3. Participant follows sample instructions from their home, carries out the collection, submits the sample to the lab, and awaits emailed report
 - I am cc'd on every report distributed by laboratory
 - Average turnaround time of results = ~3 weeks from sample drop off



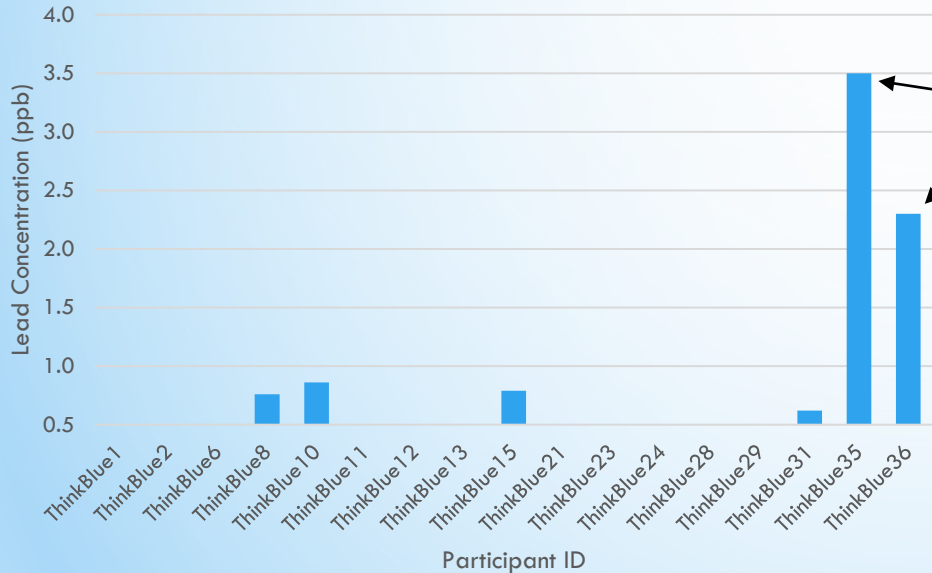
**GET THE
LEAD OUT!**

Important information about
drinking water and lead

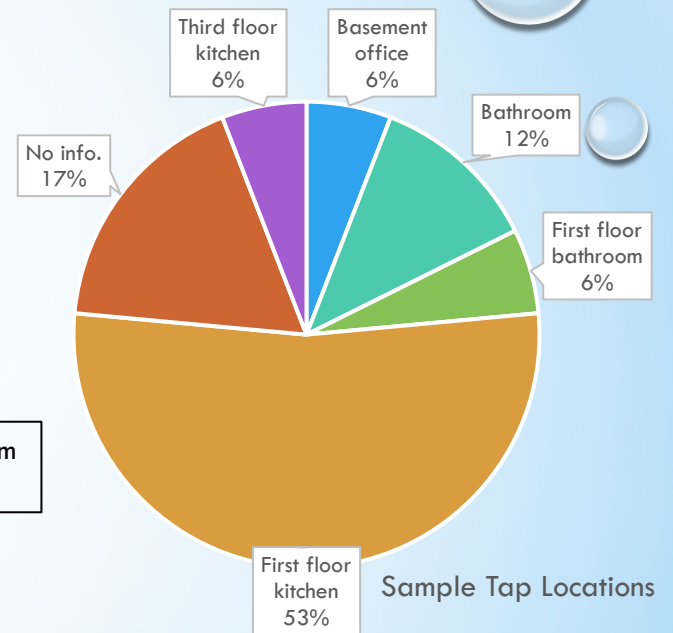


RESULTS SINCE OCTOBER ROLLOUT

Free Lead Testing Opportunity - Results per Participant

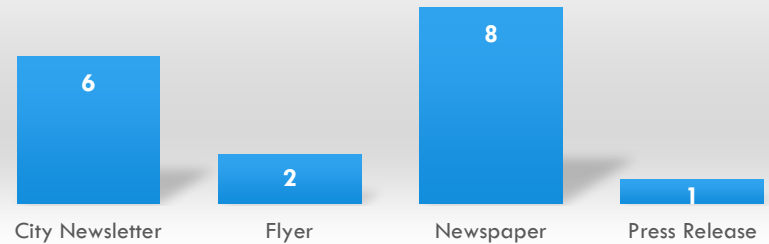


Bathroom taps



Sample Tap Locations

Effective Forms of Outreach



QUESTIONS?

DETERMINE IF YOU HAVE A LEAD SERVICE LINE
OR INTERIOR LEAD PLUMBING OR SOLDER.

REPLACE PLUMBING FIXTURES AND SERVICE
LINES CONTAINING LEAD.

RUN THE COLD WATER TO FLUSH OUT LEAD.

USE COLD WATER FOR COOKING AND PREPARING
BABY FORMULA.

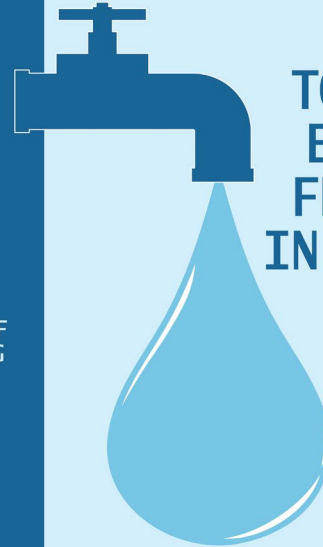
DO NOT BOIL WATER TO REMOVE LEAD.

USE ALTERNATIVE SOURCES OR TREATMENT OF WATER IF
THERE IS CONFIRMED OR SUSPECTED LEAD-CONTAINING
MATERIALS IN YOUR HOME OR BUILDING.

REMOVE AND CLEAN AERATORS/SCREENS
ON PLUMBING FIXTURES.

TEST YOUR WATER AND FAMILY FOR LEAD.

GET YOUR CHILD TESTED.



STEPS TO REDUCE EXPOSURE FROM LEAD IN DRINKING WATER



Mason Caceres – Water Quality Specialist II

email: mecaceres@cityofportsmouth.com

phone: 603-312-3804

