

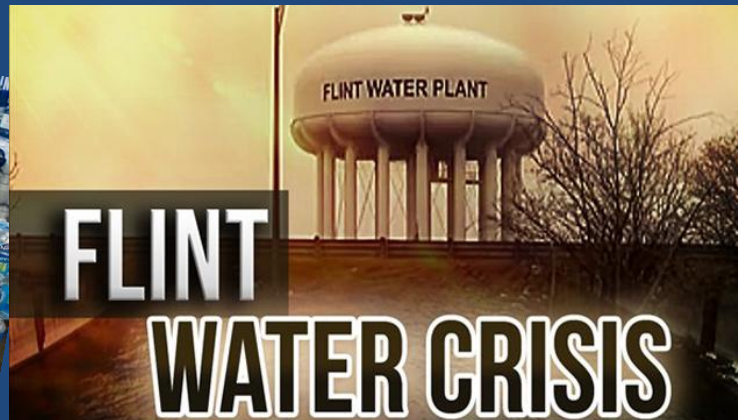
Should Cincinnati Have Concern about Lead in Drinking Water?

“Cincinnati is no Flint, Michigan, by any stretch of the imagination!” - Kevin Reynolds, GCWW Chemist

“Flint River water corrodes lead pipes at 19 times the rate of water piped from Detroit” - Dr. Mark Edwards, Virginia Tech



By Kevin Reynolds, GCWW Chemist



Laws That Regulate Lead Content in Water

- **Safe Drinking Water Act-1974** –Set Pb MCL of 50 ppb entering dist. system.
- **SDWA Amendments-1986** – Max. Pb in fittings 8% (4% in 8/2001) & solder 0.2% & later product enforcement capability.
- **Lead and Copper Rule & Revisions-1991** –Set corrosion control treatment technique action level for Pb of 15 ppb at the 90th percentile. Exceedance triggers aggressive public education, additional monitoring, corrosion control and possible costly lead service line replacement requirements.

Source Water Contamination: Ohio River and GMR Aquifer



VS

Flint River

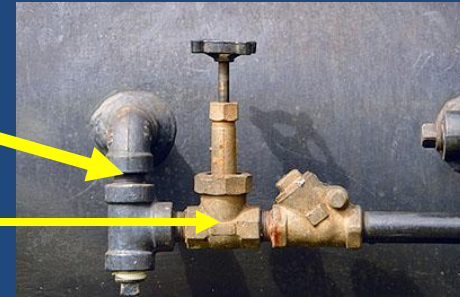


- Ohio River Pb Concentration: < 1 ppb (detection limit)
- GMR Aquifer Pb Concentration: < 1 ppb
- RMTP Finished Water Pb Conc.: < 1 ppb
- CMBP Finished Water Pb Conc.: < 1 ppb
- Flint River Pb Concentration: (< detection limit)
- FWTP Finished Water Pb Conc.: (< detection limit)

So, where is the problem?

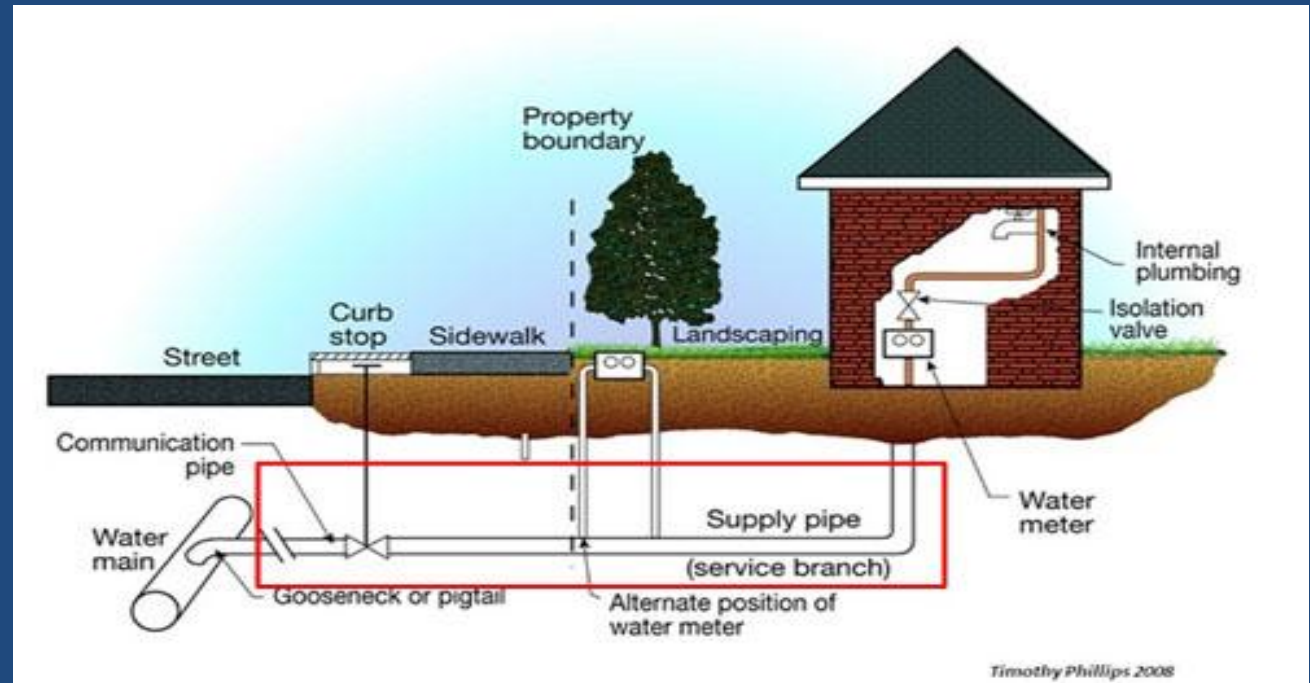
Potential Sources of Pb in Drinking Water

- Leaded joints. **(No longer used. GCWW has a replacement program.)**
- Lead service branches. **(GCWW has a replacement program.)**
- Lead home fixtures and plumbing.
- Brass fixtures.
- Older Lead solder (50% Pb)
- New plumbing & fixtures. (No scale)
- Polluted source water **(Uncommon).**



Lead in Contact with Water in Cincinnati

- 18,000 lead service branches in Cinti. & Hamilton County
- Partly owned by GCWW and home owner.
- Located in old neighborhoods with homes built before 1927.
- Examples: Hyde Park, Westwood, Mt. Lookout, Mt. Healthy...
- NOT socio-economic related.
- Expensive to replace (\$2000-5000 for homeowners portion.)



What Happened in Flint-

Best Guesses

- Financial woes led to decision to stop buying expensive water from Detroit (Lake Huron water).
- Form a water district with several small utilities & build a new plant (Lake Huron water).
- Operate a mothballed plant and treat Flint River water in the interim (2-4 year period), without corrosion control (MDEQ approved).

What Happened in Flint- Best Guesses

- **Multiple severe problems immediately occur...**
 - **Corrosive water-** Dissolves scale, immediate rusty water complaints, inability to maintain chlorine residual, coliform violations, boil water advisories.
 - **Incorrect Response-** Raise chlorine, causes skin rashes & worsens rusty water, lead leaches into water, trihalomethane (THM) violations occur, illnesses spike.



What Happened in Flint- Best Guesses

- Warnings and complaints are ignored.
- Michigan corrosion study Pb sampling instructions + incompetent or deceptive site selection = lead action level is not exceeded!
- MDEQ is focused on **multiple acute problems**, “Interim status” of plant and near bankruptcy of Flint. Pb poisoning is chronic.
- Unfortunately, acute problems continue for years! People are poisoned in the “interim.”
One home with a partial Pb SB had 13,200 ug/L Pb!

Could This Ever Happen Here?

No, because...

- GCWW began corrosion control in the early 1900's-to protect pipe investment.
- All GCWW revenue must used only for/by GCWW. **(Plant and Distribution System Maintenance up-to-date)**
- GCWW's Goal: Replace 1% of old water main/year, and related lead service branches.

How Does GCWW Control Corrosion?

- Performed pipe loop studies, scale analysis.
- pH adjustment with lime and sodium hydroxide at RMTP. **(Target pH=8.8)**
- pH adjustment with lime at CMBP. **(Target pH=9.0)**
- Addition of a low dose of poly-phosphate to sequester calcium and prevent scale build-up.
- Required monitoring, sample collection & analysis, reporting results, advising customers.

Could This Ever Happen Here?

No, but...

- There is no safe level of Lead in water!
- There are about **18,000 lead service branches in Hamilton Co. & Cinti.**
- Of 100 locations deemed to have the highest potential for high Pb in Cinti., our 90 percentile sample is typically ~3-10 ppb, with only a few homes > 15 ppb.
- Customers are informed of results and encouraged to replace their SB, if possible.



Could This Ever Happen Here?

No, but we know that...

- Pb SB partial replacement will cause elevated Pb in your home! (We attempt to coordinate with customers so both replacements will occur simultaneously.)
- If we must replace our portion of Pb SB and the customer cannot afford to spend \$2000-5000 to replace theirs...,
 - we provide a 6 month supply of filters and thoroughly flush lines to remove Pb particles.



Could This Ever Happen Here?

No, because...

- **GCWW Has Qualified Personnel:**
 - Ohio Water Supply Licensed GCWW plant operators. Class 1, Class 2, Class 3, with a few 4's.
 - GCWW Chemists must have a Class 2 license or higher, renewed every 2 years.
- **GCWW employees are career, highly experienced & turnover is low.**
 - Operators and chemists are on duty 24/7!
 - We have advanced SCADA and continuous monitors in both plants and in the distribution system.
- **Ohio EPA provides strict regulatory oversight of all aspects of water treatment for plants throughout Ohio.**

We may not be “Genius of the Waters,” but we know our business!



- *“This is GCWW Customer Service. How may I help you?”...*
- *“You have lead questions? I can try to answer them, or I can connect you with one of our chemists, who will bore you to tears with more lead information than you can ever use. OK, let me see if I can reach one. Hold on, I’m transferring the call...”*