

The Federal Lead and Copper Rule & Public Health

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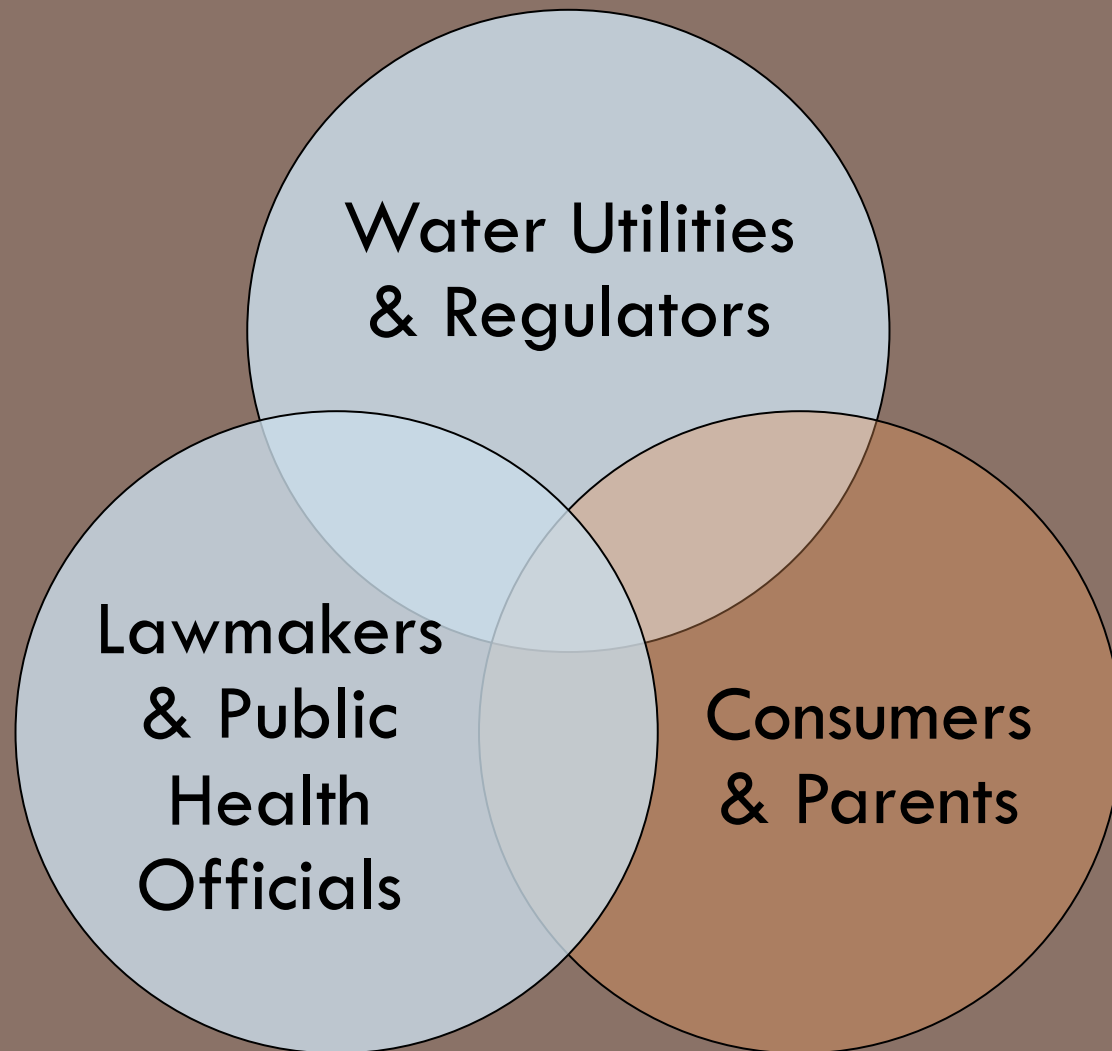
National Environmental Public Health Conference
Atlanta, GA

Is the water safe to drink?

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Different Q for different stakeholders

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Topics

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- ❖ What it is
- ❖ What people think it is
- ❖ What it looks like in practice
- ❖ How it can be improved

What is the federal LCR?

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- ❖ The law that was promulgated by the Environmental Protection Agency (EPA) to **protect the public from exposure to lead & copper at the tap.**
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- ❖ It was enacted in 1991 to comply with the Safe Drinking Water Act of 1974. The SDWA required EPA to develop “minimum national standards” for drinking water contaminants known or suspected to cause adverse health effects.

LCR's estimated contribution of water to overall blood lead levels

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❖ According to the LCR,

“... the total drinking water contribution to overall lead levels may range from **as little as 5 percent to more than 50 percent of children's total lead exposure. Infants dependent on formula may receive more than 85 percent of their lead from drinking water.** As exposures decline to sources of lead other than drinking water, such as gasoline and soldered food cans, drinking water will account for a larger proportion of total intake.”

(Federal Register, Vol. 56, No. 110, June 7, 1991, p. 26470)

The LCR in brief

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The LCR reduces lead levels at the tap by requiring water utilities to:

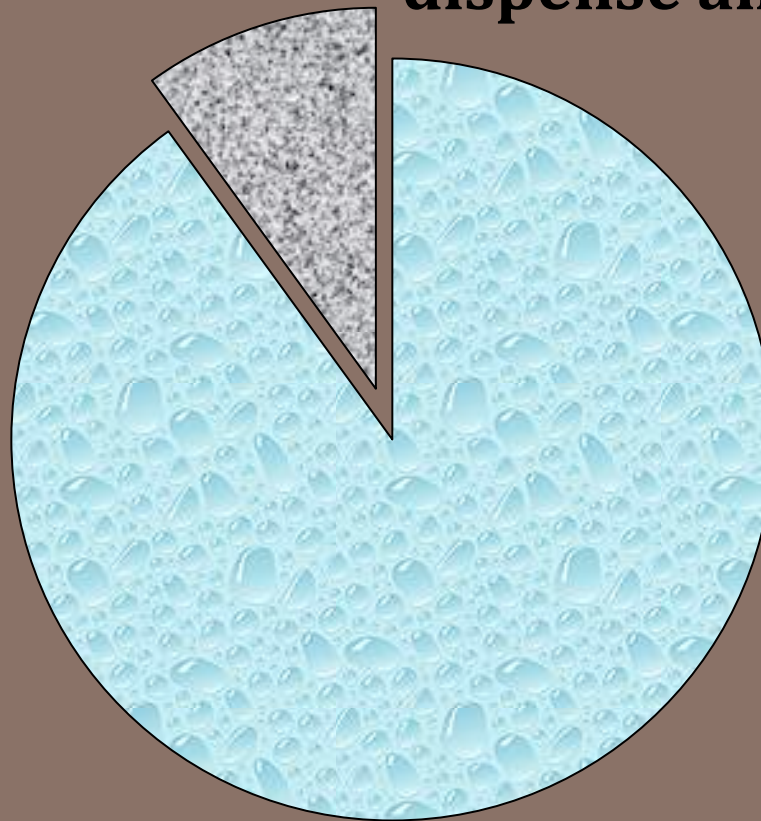
Treat the water in a way that reduces its ability to corrode pipes.

Monitor the water by capturing worst-case lead levels under normal water use conditions. If the LAL of 15 ppb is exceeded at >10% of sampled homes, take additional measures (i.e., more testing, source water treatment, better corrosion control, public education, LSL replacement).

LCR compliance can look like this

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Up to 10% of homes can have taps that dispense any amount of lead.



■ < LAL
■ > LAL

How did the public interpret the LCR?

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❖ **Common assumption**

If a city's water meets LCR standards, there is little to worry about in terms of lead at the tap.



With the enactment of the LCR, the issue of lead in drinking water “largely faded from the media spotlight.”

(Public Works Magazine, 2006)

What EPA says

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When the LAL is not exceeded:

- ❖ Water utilities can legitimately declare that a city's water is safe to drink in relation to lead.

(US EPA Office of Ground Water & Drinking Water, LCR Long-Term Issues Stakeholder Meeting, Washington DC, October 14-15, 2008)

What many state health agencies say

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- ❖ In a 2004 EPA survey of state health agencies regarding local efforts to reduce lead in school water, many states noted that “**schools also benefit from the LCR in that they are customers of public water systems that must meet the requirements.**”

(EPA, “Controlling Lead in Drinking Water for Schools and Day Care Facilities,” 2004, 6)

What CDC says

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- ❖ **CDC website:** “How do I know if my tap water is contaminated with lead? ... *you must ask your water provider whether your water has lead in it.* For homes served by public water systems, data on lead in tap water may be available on the Internet from your local water authority. If your water provider does not post this information, you should call and find out.”

●
- ❖ **CDC risk assessment guidelines:** “For homes served by public water systems, data on lead in drinking water should be obtained from the water supplier. [...] *If prior testing of a public water system shows that lead contamination is not a problem in homes served by that system, no additional testing is necessary, unless no other source of a child’s EBLL can be found.*”

What the DC Department of Health said

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❖ **2004 Press Conference:**

Case of hospitalized child with lead poisoning

“The water currently has not been tested. The risk assessment that was done a year ago does not require the water, because we believe Safe Drinking Water Act was in place and therefore water was not a contribution.”

Lynette Stokes, PhD, MPH, Chief, Bureau of
Hazardous Material & Toxic Substances

Excerpt from televised recording, case study, Marc Edwards, PhD, Department of Civil and Environmental Engineering, Virginia Tech

But...

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Consumer Reports

Eric H. Holder, Jr.
Report

Washington Post

UC Berkeley

Government
Accountability
Office

Washington DC

Durham NC

New Orleans LA

Independent studies and actual cases reveal a different picture about the safety of the drinking water when utilities are in technical compliance with the LCR.

What independent studies say

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1993 Consumer Reports study	17% of Chicago samples exceeded the LAL, even though the city met LCR requirements.
2004 Eric H. Holder, Jr. Report	In 2000-01, Washington DC met LCR requirements, even though over 10% of samples exceeded the LAL.
2004 Washington Post investigation	Water utilities across the country underreport lead-in-water problems, violating federal law and placing millions of Americans at risk.
2004-2005 UC Berkeley study	In 2005, 63% of Washington DC homes exceeded the LCR, even though the city met LCR requirements.
2006 US GAO report	EPA's database on lead-in-water levels across the country and water utilities' compliance with the LCR is severely deficient.

What cases say

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Washington DC

In 2001-04 hundreds, and possibly thousands, of infants and toddlers developed EBLs as a result of the city's lead-in-water crisis, while the water utility a) was technically in compliance with the LCR or b) had exceeded the LAL, but had failed to properly inform residents. Today, because of doubts about the integrity of the utility's LCR data, the city is conducting its own citywide testing.

Durham NC

In 2005, a child's lead poisoning was attributed solely to contaminated drinking water in the home, while the water utility was in compliance with the LCR.

Why is the LCR failing the public?

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- **Inherently weak**

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- **Disincentives**

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- **Loopholes**

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- **Some utilities cheat**

Inherent weaknesses

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LAL	No MCL. 10% of homes can have serious problems. Lead under 15 ppb doesn't require action.
Sampling protocol (<u>based on the false assumption that lead is always soluble</u>)	Only 1 st draw samples count Only one tap in every home – cold water, low flow Small number of monitoring samples Schools, parks, restaurants not sampled
Analytical protocol	Can miss lead particles.
Public education	Only when contamination is widespread. Vague & incomplete messaging.
Remediation	Allows a) partial LSL replacements that can result in lead spikes of an undetermined duration while requiring no long-term follow-up, b) LSL testing in lieu of replacement.

Disincentives

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**Failure to meet the LAL
can be time-consuming and costly**

**Corrosion
control
optimization**

**Lead service
line
replacements**

**Public
education
requirements**

Loopholes

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LCR monitoring program design	Focus on neighborhoods and homes predicted to have low lead Avoid season when lead levels peak Sample when water is least corrosive
Sampling instructions to customers	Flush tap the night before sampling Limit stagnation time prior to sampling Use bottles with narrow opening
Management of samples prior to analysis	Keep samples from non-high-risk homes
Lab analysis	Use weak acid in sample preparation Use 2 nd , “unofficial” lab for suspected high-lead samples

Some utilities cheat

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LCR monitoring program design

Include in the sample pool homes that in the past tested low, and exclude homes that tested high
Conduct 2nd sampling to increase number of low lead homes and bring the 90th percentile <15

Sampling instructions to customers

Remove aerators prior to sampling

Management of samples prior to analysis

Discard proper samples if their collection was preceded by long stagnation

Reporting to oversight agencies

Throw out results with high lead levels

Remediation

Ignore requirements to correct problems

EPA & States don't always do their job

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- ❖ **Lax oversight and enforcement**
- ❖ **States fail to report violations to EPA**
- ❖ **EPA openly supports actions that go against the intent of the LCR and can miss lead-in-water problems**



“We can't afford to do these kind of checks [on utility compliance with drinking water regulations] everywhere, and neither can the states.”

(J. M. Capacasa, EPA Region III, 2004)

Extent of the problem

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❖ **Between 2000-2004:**

274 utilities, which together serve 11.5 million people, reported LAL exceedances. This does not include cities where testing methods concealed true lead levels.

Solutions

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With a clear emphasis on public health and the public's right to know so that it can make informed decisions about water use, revise rule to:

- ❖ Eliminate weaknesses
- ❖ Close loopholes
- ❖ Create incentives for the detection and proper disclosure of lead-in-water elevations (even if those elevations are <15 ppb and affect <10% of high-risk homes)

Conclusion

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- ❖ **The LCR has created a false sense of security:** although it has helped reduce lead contamination in US drinking water, compliance with the LCR does not always protect the public from hazardous levels of lead at the tap or prevent lead poisonings from water.
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- ❖ **The LCR needs substantial revisions:** to ensure that a) water monitoring & remediation are conducted properly, b) authorities responsible for LCR compliance and enforcement are accountable to the public, c) **the public is always informed about potential risks.**