Administrator Dan Regan
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, DC 20460

April 9, 2021

RE: National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions, Docket No. EPA–HQ–OW–2017–0300; FRL–10021–00–OW

Dear Administrator Regan,

Thank you for soliciting comments on EPA's proposed delay and reconsideration of the Lead and Copper Rule (LCR). The International Society for Environmental Epidemiology (ISEE), North America chapter, is submitting these comments in support of EPA's proposal.

The ISEE represents researchers who study the relationships between environmental factors and public health. ISEE-North America Chapter (ISEE-NAC) is charged with promoting and strengthening scientific research in environmental epidemiology in the United States, Canada, Greenland, and Bermuda.

First, we support EPA's proposed extension in the comment period to accommodate a more complete evaluation of the LCR EPA precipitously published in the Federal Register on January 15, 2021. The extension delays by 6 months the effective date of the LCR Revisions from June 17, 2021 to December 16, 2021 (and a 9-month extension of the current compliance date of January 16, 2024 to September 16, 2024). This will enable EPA to engage with stakeholders and to address the many issues that were raised during the proposal period, but which were not satisfactorily resolved.

The 1991 LCR is long overdue for revision. One just needs to read national, state or local newspapers to know that lead contamination of drinking water is a national occurrence. Flint, Newark, Detroit, Pittsburgh are examples of long-standing lead problems afflicting urban areas. All of these areas have a common profile: low income and minority communities that can ill-afford further environmental injustice.[1] EPA has the data and obligation to support more protective standards than were published in January 2021.

The timing could not be more critical. Last week, the Centers for Disease Control and Prevention (CDC) released an article showing that the upper percentiles of US children's blood lead levels began rising in the past few years, reversing a 50-year trend.[2] US lead production and consumption have been rising

[1] Coursen, D., 2020a. A just EPA budget for environmental justice. Hill August 25, 2020.
Coursen, D., 2020b. A neglected environmental justice issue: indoor plumbing. Hill August 6, 2020.

[2] Egan KB, Cornwell CR, Courtney JG, Ettinger AS. Blood Lead Levels in US Children Ages 1–11 Years, 1976–2016. Environmental health perspectives. 2021 Mar 17;129(3):037003.

for several decades.[3],[4]

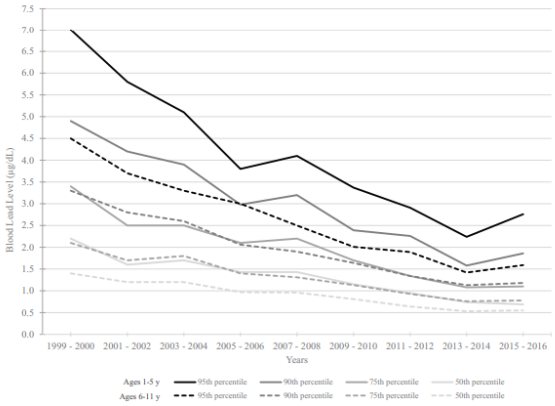

Figure 2. Selected percentiles of blood lead concentrations (in µg/dL) for U.S. children ages 1–5 y (solid line) and ages 6–11 y (dashed line) in the National Health and Nutrition Examination Survey (NHANES), 1999–2016, by 2-y survey cycle (years); data are shown in Table S2.

Also last week, the Guardian and Consumer Reports released a study of community water systems across the US that found that 99% of the water samples had detectable lead levels.[5] While only 1 sample exceeded EPA's Action Level, the average was higher than reported to EPA.

We encourage EPA to revisit the LCR during this extension to increase the health benefits that can occur under a better designed LCR, particularly for disadvantaged and minority communities. We stand ready to assist EPA in addressing the shortfalls in this important rule.

In short, our comments are:

1. Instead of a new unenforceable 'trigger' at 10 ug/l, EPA should lower the drinking water Action Level to 10 ug/l.

2. The LCR is rife with implementation and compliance problems. EPA must detail how the revisions will address these deficiencies.

3. To better characterize the lead contamination in homes with lead service lines (LSLs), EPA should require that both the 1st and the 5th liter samples are analyzed and that the higher of the 2 is used for reporting purposes.

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[3] International Lead and Zinc Study Group, n.d. Global Lead and Zinc Statistics. URL https://www.ilzsg.org/static/statistics.aspx?from=3; https://www.ilzsg.org/static/statistics.aspx?from=1; accessed 3/20/21.

[4] US Geological Survey n.d.a. Mineral Yearbooks, 1990-2016. URL https://www.usgs.gov/centers/nmic/minerals-yearbook-metals-and-minerals accessed 3/20/21.

US Geological Survey n.d.b. Lead Statistics and Information. Natl. Miner. Inf. Cent. URL https://www.usgs.gov/centers/nmic/lead-statistics-and-information accessed 3/20/21.

[5] Felton R, Gill L, Kendall L. We sampled tap water across the US – and found arsenic, lead and toxic chemicals. March 31, 2021. https://www.theguardian.com/us-news/2021/mar/31/americas-tap-water-samples-forever-chemicals

4. We are concerned that EPA has imposed the burden of this rule, including standard setting, monitoring, reporting evaluation and oversight, upon the States, as the primacy agencies under the Safe Drinking Water Act. The States are ill-equipped to undertake all of this responsibility. EPA should establish strengthened guidelines and standards, leaving the States with evaluation and oversight responsibility. Enforcement should be shared between EPA and the States with a unified reporting system.

5. We oppose reducing the LSL replacement (LSLR) from 7% annually to 3% annually. The revised rule further delays implementation by 3 years (to develop an LSLR plan), decreasing the benefits of the LSLR by 75% from the current situation where water supplies must now replace LSLs at the rate of 7%/year.

6. In addition to the 'games' that EPA proposed to prohibit, the 2 most common games should be prohibited: deleting outliers and sampling out. In the former, water utilities routinely delete their highest water lead readings because they are outliers; this is inappropriate especially in a rule focused on high-risk sample sites. 'Sampling out' is when water utilities increase the number of low-lead samples to lower the 90th percentile. Even the trade association (Association of State Drinking Water Administrators, ASDWA) states, "Sampling multiple times at the same location in the same compliance period goes against the goals of both the existing LCR and the LT-LCR."

7. As EPA proposed, 'find and fix' applies a corrosion control treatment approach to an immediate high lead risk concern and does nothing to provide immediate risk reduction where high lead levels related to an LSL are encountered. The focus in the rule should be lead service line removal and point-of-use (POU) or pitcher/filter provision for immediate lead risk reduction especially related to LSL, with corrosion control for ongoing water quality maintenance.

8. EPA should correct several systematic 'statistical' biases in the sampling protocols that drive down reported water lead levels (WLLs) and permit higher WLL exposures. First, only high WLLs are resampled. For a rule where most of the samples are below the AL, resampling only high values will bias results downward through 'regression to the mean'. Second involves the various 'games' used by water utilities, often under the guise of statistical 'reproducibility', 'reliability', 'controlling variability', 'deleting outliers', etc. to eliminate samples with high WLLs.

   The third is most basic and relates to how the 90% is calculated in all instances. The rule requires systems taking five samples to average the highest and second highest samples to determine the 90%. This is not the 90%, because in a distribution, the 90% cannot be the average of the highest 40% of samples. Mathematically, for 5 samples, the 90% is the highest sample. While the calculation process included in the rule more closely approximates the 90th percentile as more samples are included, even systems using 100 samples only calculate the 89.5 percentile. This results in fewer systems taking action to address high WLLs and less public health protection. This is particularly significant for smaller systems taking fewer samples.

9. We oppose numerous components of the 2021 LCR that weaken public health protections and constitute 'backsliding', which is illegal. These include the change in LSLR rate from 7% to 3% annually (mentioned in #5 above). This is further delayed by 3 years (to develop the plan), which reduces the benefits of the LSLR by 75% from the current situation where water supplies must now be replacing LSLs at the annual rate of 7%. Another is allowing partial LSLR in numerous cases, increasing lead exposures to residents. Both EPA and the National Drinking Water Advisory Committee have called for prohibiting partial LSLR. Finally, EPA does not credit replacing lead goosenecks, pigtails or connectors for the purposes of meeting the mandatory lead service line replacements goal. This will decrease the incentive to remove them, leaving millions of Americans with continued and unnecessary lead exposures**.**

10. We advocate a strengthened and actionable approach to childcare and school facilities. While the inclusion of schools and childcare facilities could improve health protection, as currently proposed the school and childcare water sampling requirements are inadequate, misleading, and will waste money with no public health benefit, because **excessive lead levels do not constitute a violation of the rule and no remediation is required**. Unless strengthened and clarified, we suggest eliminating the school and childcare sampling requirements and modifying the small system flexibility requirements of §141.93 option (3) for POU devices to apply to schools and childcare facilities where any sample exceeds 10 ug/l.

    Given that lead is found in virtually all plumbing (either as a constituent or as a contaminant), a POU strategy for schools and childcare facilities that includes regular maintenance will immediately improve health protection for part of the most vulnerable population. The revised NSF certification standard of 5 ppb for filters certified under NSF 53 and NSF 58 for lead removal will enable schools and childcares to continue to use water from public water systems rather than switching to bottled water.

A final comment

We recommend that EPA consider going beyond its proposal and lower the drinking water AL to 5 ug/l. The US and EPA are out of sync with the rest of the developed world and even more so, out of sync with the science.

The European Union and the World Health Association already use 10 ug/l as the target value for drinking water. Within the US, the state of Michigan is considering 12 ug/L as the state action level because of concerns that the 15 ug/L action level was not sufficiently protective.

Most recently, Canada established a maximum allowable concentration (MAC) of lead in drinking water of 5 ug/l in 2019. https://esemag.com/water/health-canada-sets-new-guideline-for-lead-in-drinking-water/ Similarly, the joint committee governing the American National Standards for drinking water treatment units recently lowered the maximum allowable concentration of lead in treated drinking water to 5 parts per billion. https://www.nsf.org/newsroom/drinking-water-treatment-units-stricter-requirements-lead-reduction-cert NSF Standards 53 and 58 now require drinking water treatment units to reduce the lead in drinking water to 5 ppb.

The **environmental research science documents that no threshold is evident for lead's effects** on children, adults, animals or the natural world.[6], [7], [8], [9], [10] Further, the studies linking lead exposure with cognitive impairment and other effects show a decelerating dose-response relationship indicating that damage is greater at lower exposure levels. The time for reducing lead exposures is now.

On behalf of the ISEE-NAC, we strongly support EPA's proposal to extend the LCR implementation schedule, and further, to thoroughly revisit the health benefits that can occur under the LCR, particularly for disadvantaged and minority communities. We stand ready to assist EPA in addressing the shortfalls in this important rule.

Sincerely,

Ronnie Levin

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Representing the International Society for Environmental Epidemiology North America chapter (ISEE-NAC)

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[6] Lanphear BP, Hornung R, Khoury J, Yolton K, Baghurst P, Bellinger DC, Canfield RL, Dietrich KN, Bornschein R, Greene T, Rothenberg SJ. Low-level environmental lead exposure and children's intellectual function: an international pooled analysis. Environmental health perspectives. 2005 Jul;113(7):894-9.

[7] Lanphear BP, Rauch S, Auinger P, Allen RW, Hornung RW. Low-level lead exposure and mortality in US adults: a population-based cohort study. The Lancet Public Health. 2018 Apr 1;3(4):e177-84.

[8] Desrochers-Couture M, Oulhote Y, Arbuckle TE, Fraser WD, Séguin JR, Ouellet E, Forget-Dubois N, Ayotte P, Boivin M, Lanphear BP, Muckle G. Prenatal, concurrent, and sex-specific associations between blood lead concentrations and IQ in preschool Canadian children. Environment international. 2018 Dec 1;121:1235-42.

[9] Canfield RL, Henderson Jr CR, Cory-Slechta DA, Cox C, Jusko TA, Lanphear BP. Intellectual impairment in children with blood lead concentrations below 10 μg per deciliter. New England journal of medicine. 2003 Apr 17;348(16):1517-26.

[10] Levin R, Zilli Vieira CL, Rosenbaum MH, Bischoff K, Mordarski DC, Brown MJ. The urban lead (Pb) burden in humans, animals and the natural environment. Environ Res. 2021 Feb; 193:110377. doi: 10.1016/j.envres.2020.110377. Epub 2020 Oct 28. PMID: 33129862.