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January 15, 2024

Michael S. Regan
Administrator
United States Environmental Protection Agency

AIHA's Recommendations on EPA's Proposed Lead and Copper Rule Improvements (LCRI)

Agency/Docket Numbers: EPA-HQ-OW-2022-0801 / FRL-5423.2-01-OW
RIN: 2040-AG16

Dear Administrator Regan:

AIHA, the association for scientists and professionals committed to preserving and ensuring occupational and environmental health and safety (OEHS), appreciates the opportunity to provide feedback on the United States Environmental Protection Agency's (EPA) proposed Lead and Copper Rule Improvements. We hope you find our feedback useful and are happy to answer any questions you may have.

General Matters

1. Whether the proposed revisions to the LCRR treatment technique are effective to prevent known or anticipated adverse health effects to the extent feasible in accordance with the SDWA.

The only way to determine lead concentrations in drinking water is to test the water. The only way to test the body burden for lead is to test for lead concentrations in the human body. And any test result must accurately reflect actual conditions. AIHA, therefore, recognizes the need for lead laboratory certification by participation and compliance with lead laboratory proficiency testing, which should be added to these regulations.

AIHA supports EPA in proposing to lower the lead action level and eliminate the lead trigger level to simplify the rule and require water systems to act earlier. The current SDWA 15 ppb (15 µg/L) lead in water action level is not a health-based standard. AIHA believes that public education must play a significant role in these proposed rules.

Lead in the drinking water can cause long-term, permanent adverse health effects to exposed persons and unborn children. The extent of lead exposure from drinking water throughout the U.S. and the corresponding incidence of the long-term health effects from drinking water contaminated with low concentrations of lead is currently unknown. Funding

for research to examine the prevalence of human injury from lead in drinking water is needed.

"Lead in tap water is primarily contributed by lead service lines and lead-containing solder and brass in premise plumbing. Although lead was banned for service line use in 1986 in the United States, 6.3–9.3 million LSLs are still in use nationally."[i]

AIHA recognizes that any level of lead ingestion may cause adverse health effects.

AIHA supports the CDC's efforts regarding lead exposure prevention, including:

- "Primary prevention is the removal of lead hazards from the environment before a child is lead exposed. It is the most effective way to ensure that children do not experience harmful long-term effects of lead exposure.
- Secondary prevention includes blood lead testing[1] and follow-up care and referral. It remains an essential safety net for children who may already be exposed to lead."[ii]

AIHA believes lead in drinking water should be established at the lowest possible or lowest achievable concentrations.

Regarding school facilities, AIHA supports the participation of elementary, middle, and secondary schools and youth detention centers in a water sampling program.

> "The LCRR requires water systems to sample at least 20% of elementary schools and at least 20% of childcare facilities each year until all facilities are contacted. An elementary school or childcare facility may decline to have its taps sampled. The LCRR does not require schools or childcare facilities to sample for lead or require them to allow water systems to conduct sampling; however, a Community Water System (CWS) is required to conduct sampling at the request of any school or childcare facility within its service area. Water systems must be sampled at secondary schools upon the school's request. States may offer waivers to the school and childcare facilities sampling requirements under certain circumstances."[iii]

2. Whether there are additional ways EPA could reduce the complexity of the regulatory approach used to address lead in drinking water consistent with the statutory standard for a treatment technique rule in section 1412(b)(7)(A) of SDWA. Specifically, EPA requests comment on ways that the proposed LCRI could be simplified and ways that burden, including paperwork burden, could be reduced without affecting the ability of the rule to prevent known or anticipated adverse health effects.

AIHA believes that EPA especially needs to reduce any complexity of the rule and include provisions that support more efficient implementation by city water systems while reducing

[1] https://www.cdc.gov/nceh/lead/prevention/testing-children-for-lead-poisoning.htm

lead exposure, particularly in low-income or other vulnerable populations, such as youth detention centers.

For example, the proposed rule states:

> "While the LCRR used the definition of "full lead service line replacement" in subpart A of part 141 to specify full replacement criteria, these are substantive provisions that are integral to the requirements in § 141.84 (the service line inventory and replacement section). Including these substantive requirements in the service line replacement section of subpart I of part 141 instead of the definitions section of subpart A of part 141 should help water systems and States in implementation of these regulatory requirements."

EPA should describe the meaning more clearly so those without legal training can understand what this paragraph means to say regarding how these changes help water systems and States in the implementation of these regulatory requirements.

Section § 141.2 contains "Definitions"

AIHA believes the "executive summary" should provide concise operational meanings for "action level" and "trigger level" with how these meanings vary from the older lead in drinking water standard with an explanation of how these concentrations may vary. For example, "trigger" is found 78 times in the rule. "Action level" is found 556 times in the rule which carries confusion to the reader.

3. Whether the proposed requirements of the rule are enforceable and promote compliance without the need for State or Federal enforcement action. EPA also solicits comment on ways the rule could be modified to better promote compliance.

AIHA recommends that EPA clearly identifies its enforcement policies and procedures for compliance with the new rule. Specifically, AIHA recommends that EPA clearly say how affected parties will be held accountable for lead testing and removing lead in the drinking water.

Service Line Replacement

1. All aspects of the proposed scope of the replacement requirements, including the criteria used to define a full service line replacement (e.g., cutting the pipe at abandoned properties, replacing the entire service line) and which lead sources are subject to replacement under the mandatory program. EPA is seeking comment on whether to prohibit reconnection of any disconnected LSL or GRR service line. EPA is requesting comment on whether the Agency should include lead connectors or galvanized service lines that are or were downstream of a lead connector as part of mandatory replacement.

AIHA believes that EPA should not allow lead connectors or galvanized service lines as part of mandatory replacement.

3. Whether the proposed LCRI appropriately interprets "control" for the purposes of the mandatory replacement provision (i.e., require systems to conduct full service line replacement in situations where the system has access to conduct the full replacement).

AIHA believes that replacement provisions may vary according to engineering assessments of service lines.

4. The proposed minimum replacement rate and replacement deadlines. EPA is seeking comment on whether it is feasible for systems across the nation to complete service line replacement in a shorter timeframe than ten years, such as in six, seven, or eight years. EPA is seeking comment on the rate construct approach, including how to calculate compliance with a given service line replacement deadline and average annual rate calculated across a rolling three-year period. EPA also seeks comment on whether systems should be required to meet a minimum replacement rate in the first three years after the compliance date to give States an opportunity to enforce replacement rate progress sooner than three years after the compliance date. EPA also seeks comment on the complexity of the rate construct.

AIHA believes that each situation where service line replacement is required will be different, so flexibility is recommended. The timeliest cost-effective approach is needed. AIHA recommends timely completion of lead-containing service line replacement across the nation.

In cases of delayed remediation, persons affected by lead concentrations above the acceptable level should be notified in writing about the risks of lead exposure, the results of

lead service line replacement feasibility studies, and the time needed for complete and effective remediation.

5. EPA is taking comment on whether States, as a condition of primacy, or EPA when it is directly implementing the program, should be required to set initial shortened deadlines by a certain timeframe, such as no later than 60 days after the compliance date.

AIHA believes shortened deadlines for program implementation may prove difficult and 60 days after the compliance date is too short.

6. The overall approach and basis to offer deferred service line replacement to systems with a high proportion of LSLs and GRR service lines in their distribution system relative to their total number of households served. EPA is requesting comment on its proposed threshold of 0.039 average annual number of replacements per household served, which is used to calculate the number of years that systems can defer.

AIHA does not concur with the proposed threshold of 0.039 average annual number of replacements per household served. Each situation may differ and a single requirement for the determination of replacements should be based on individual assessments.

7. Whether to require the State, as a condition of primacy, to approve the use of the deferred deadline provision where the water system qualifies for it and/or whether to require the State, as a condition of primacy, to assess whether it would be feasible for a system to meet the 10-year deadline or a shorter deadline even if the system meets the regulatory criteria for the deferred deadline.

AIHA does not believe that EPA should set deferred deadlines, however, remediation depends on the extent of the lead contamination problem and system capabilities.

10. Whether systems conducting deferred service line replacement should be subject to any additional requirements beyond those for systems that are not replacing service lines in accordance with a deferred deadline.

AIHA believes that deferred system line replacement may result in continued unacceptable lead exposures. EPA should implement a system where the worst lead-containing systems are addressed first.

11. The requirement for systems to install a dielectric coupling when conducting a partial replacement of an LSL or GRR to separate the remaining LSL or GRR service line and the replaced service line unless the replaced service line is made of plastic and other recommended risk mitigation activities.

The requirement for systems to install a dielectric coupling when conducting a partial replacement of an LSL or GRR to separate the remaining LSL or GRR service line is dependent on an engineering assessment.

12. The proposed requirement to ban partial lead and GRR service line replacement unless it is conducted in accordance with emergency or planned infrastructure work (excluding planned infrastructure work solely for the purposes of replacing lead and GRR service lines as part of a service line replacement program). Additionally, EPA is seeking comment on whether partial service line replacement should be prohibited during "planned infrastructure work" or with certain types of planned infrastructure work.

AIHA does not believe EPA should limit community alternatives for system repair or replacement, particularly by prohibiting partial service line replacement, or with diverse types of planned infrastructure work.

13. The ability of the market to correct for potential shortages in workers and materials to conduct service line replacement, as well to provide sufficient quantities of filters to comply with the service line replacement and other relevant provisions in the proposal.

AIHA believes that constraints on designers should not be placed on lead in drinking water remediation efforts.

14. The extent to which property owner consent, if required by State or local law or water tariff agreement, might complicate full service line replacement and whether there are additional measures EPA can take to facilitate access through the LCRI.

Lead service line replacement may not completely remove lead from homes. Older homes, especially in low-income communities where buildings and homes older than 1986 may still have LSLs connecting the building's plumbing system to the main water supply line. These building water lines, or lead solder can deteriorate and corrode, releasing lead particles into the drinking water. These older homes may still present a problem with lead exposure even after main service line replacement.

Tap Sampling for Lead and Copper

1. Comment on the sites included in Tier 3 and whether all of the proposed sites should be included in Tier 3, if additional sites should be included, or if some should be included in a different, lower priority tier, such as Tier 4. Specifically, comment on whether sites served by galvanized service lines or containing galvanized premise plumbing that are identified as ever being downstream of an LSL or lead connector should be included in the same tier as other sites with a current lead connector (e.g., copper service line downstream of a lead connector).

AIHA believes that the priority of system characterization should be dependent on the population serviced and the level of lead-containing constituents' and the concentration of lead contamination found in system service lines.

3. Comment on the applicability of alternate sampling protocols to assess CCT performance, increase customer participation, and other relevant factors.

AIHA believes that all alternate sampling protocols should be consistent with the best available science and technology and conform to standard water sampling methods.

5. Comment and any relevant data on the number and tiering of samples used to calculate the 90th percentile lead and/or copper levels for systems with LSLs for purposes of assessing CCT efficacy. Specifically, whether samples from non-LSL sites that have higher lead concentrations than samples from LSL sites should be included and whether these higher values should replace lower values from LSL sites in the 90th percentile calculation.

AIHA believes that all service lines containing lead should be identified using the best available technology based on engineering studies.

Service Line Inventory and Service Line Replacement Plan

2. In the LCRI, EPA is proposing a requirement for systems to validate the accuracy of non-lead service lines in their inventory that were categorized using methods other than records review or visual inspection of at least two points along the line. EPA is requesting comment on the number of validations required, the proposed 95 percent confidence level approach used to develop the number of validations required, the criteria for which methods used to categorize non-lead service lines should be included in the validation pool (including whether non-lead lines categorized based on records should be subject to validation), and the seven-year timeline for systems on a 10-year replacement deadline to complete the validation requirements.

AIHA believes the EPA approach with the 95 percent confidence level is reasonable.

Lead Action and Trigger Levels

1. EPA is seeking comment on the proposed lead action level of 0.010 mg/L, as well as comment and supporting data on alternative action levels, such as 0.005 mg/L, with regards to generally effective corrosion control treatment and identifying systems most at risk of elevated levels of lead in drinking water.

AIHA supports the recommendations of the American Academy of Pediatrics (AAP) where "drinking fountains in older schools can be an important source of lead exposure. Unfortunately, there are no regulations for evaluating lead contamination of school drinking fountains in most states." AAP recommends that State and local governments ensure that drinking water fountains in schools do not exceed water lead concentration exceeding 0.001 mg/L (1 ppb). This recommended level of lead in school fountains is an order of magnitude below the EPA proposed new action level (0.010 mg/L).[iv]

2. EPA is also seeking comment on the use of the action level to determine when additional public education is required, and the use of the same action level for public education as for the CCT provisions.

AIHA believes public education is important for all service line investigations with written reports of all lead drinking water concentrations. At a certain concentration, persons need information on blood lead levels which may need to be determined for children and those who are or seeking to become pregnant.

Corrosion Control Treatment

3. The proposed option for a water system to delay OCCT until after the system has replaced all of its LSLs and GRR service lines, while the system achieves at least 20 percent removal per year and must have no LSLs, GRR service lines, or lead status unknown service lines remaining at the end of the five-year period.

AIHA believes this EPA approach is reasonable.

Compliance Alternatives for a Lead Action Level Exceedance for Small Community Water Systems and Non-Transient, Non-Community Water Systems

2. EPA is requesting comment on the ability and practicality of point-of-use devices to address multiple contaminants.

As stated in a 2022 article,

> "The biggest challenge for POU filters is their underperformance for lead removal for some water compositions. NSF/ANSI 53 certified POU filters have been distributed in cities facing lead-in-water crises, such as Washington, DC. Flint, MI, Newark, NJ, University Park, IL, and Benton Harbor, MI. However, field sampling and lab tests have found conditions in which POU filters did not work well. High concentrations of particulate lead (1–45 µg Pb/L) were observed in the effluent of POU filters in Newark, NJ. The POU filter underperformance may be caused by (1) lead particles remaining as stable suspensions of nanoparticles and (2) low attachment efficiency to filter media because of repulsive electrostatic interactions.
>
> "Another challenge is the change of effluent water chemistry after stagnation in the POU filter. A recent study found that the pH of tap water stagnated inside POU filters decreased by 0.1–0.3 pH units. If an under-sink filter is used, then the stagnated water can be more corrosive to any downstream lead-containing solder and fixtures. Even though POU filter deployment is usually effective for controlling lead in tap water, its presence poses other challenges to tap water quality. The microbial colonization of the filter media inside the POU device can result in increases of total bacteria in the filter effluent following stagnation periods as short as overnight, which will have public health implications if pathogenic bacteria are present."[v]

Other downsides include the cost of filters and the need for frequent changing (e.g., 3-5000 L capacity for some filters).

Public Education

1. The proposed determination that the public education treatment technique is feasible and prevents known or anticipated adverse health effects to the extent feasible.

AIHA believes that public education efforts should include recommendations for blood lead testing as suggested by local physicians or other medical professionals.

3. Data, analyses, and comments on the proposed determination that water systems are capable of providing consumer notices of individual tap sampling results within three calendar days of obtaining those results, regardless of whether the results exceed the lead or copper action level, or if a longer time frame is needed (e.g., three business days, seven calendar days, 14 calendar days).

AIHA agrees with the notification of individual results within a reasonable time with recommendations on when to supply this information to an individual's medical provider.

6. Whether EPA should require systems to annually notify consumers if they are served by a lead connector, in addition to notifications for sites with lead, GRR, or lead status unknown service lines.

AIHA supports the EPA, in addition to any drinking water lead concentration results, to require systems to notify consumers at least annually if they are served by a lead connector in addition for sites with lead, GRR, or lead status unknown service lines.

8. Whether EPA should require additional public education requirements to further encourage swift service line replacement faster than the 10-year replacement deadline. For example, should water systems that have LSLs, GRR service lines, or unknown service lines five years after the compliance date for the LCRI be required to increase the frequency of the notification of service line materials from annual to once every six months?

AIHA believes it is reasonable to increase the frequency of notification of service line materials depending on the circumstances.

9. EPA is seeking information and data on when a system provides translated materials to consumers with limited English proficiency, what resources are used to translate materials (e.g., State resources, community organizations), and what barriers water systems may face in providing accurate translated materials.

AIHA believes training materials should be understandable to all community members and notes that translation services may be necessary.

11. EPA is also requesting comment on additional ways to streamline public education and associated certification requirements (e.g., combine deadlines for systems to conduct public education or submit information to the State).

AIHA believes EPA funding should be provided and available and added to the rule for the development of local or under-served community public lead training programs, such as the OSHA Susan Harwood Training Grants program.

Additional Requirements for Systems With Multiple Lead Action Level Exceedances

1. Whether water systems should be required to take additional actions when the system exceeds the lead action level multiple times and if so, what actions are appropriate and feasible, and when these additional actions should be required under the LCRI.

AIHA believes actions should be identified when blood lead monitoring is necessary and recommended for children or others where the lead action level is exceeded multiple times. Multiple action level exceedances should be defined as month over month for a defined number of months or a defined number of months within a calendar year (e.g., three months). Other recommended actions could include the delivery of bulk potable water for distribution to affected populations.

4. Whether EPA should require water systems to make filters certified to reduce lead and replacement cartridges, along with instructions for use, available to all consumers within 60 days of a system having multiple action level exceedances and whether there are any supporting or contrary data on whether the proposed filter requirement would be protective of public health.

AIHA believes that water filters are not a long-term solution to multiple action level exceedance but only a stand-in until a long-term solution is implemented.

8. Whether, in addition to the proposed requirements, EPA should provide States discretion to determine appropriate action following a multiple action level exceedance that is tailored to meet specific system needs.

AIHA believes that EPA should provide flexibility in protecting against the harmful effects of lead while providing States with alternatives tailored to system needs and the extent of action level exceedance.

Lead Sampling in Schools and Child Care Facilities

1. Whether CWSs should be required to collect more samples and/or to sample more frequently in schools and child care facilities.

AIHA believes schools, youth detention facilities, and childcare facilities should take precedence for sampling and may need more frequent sampling depending upon an initial lead survey result.

2. The proposed provision to allow States to issue waivers to community water systems from the requirement for lead sampling in schools and child care facilities during the five-year period after the LCRI compliance date if the facility was sampled for lead after January 1, 2021 but prior to the LCRI compliance date and the sampling otherwise meets the waiver requirements of §141.92(h).

AIHA believes flexibility should be allowable within the LCRI while maintaining the best lead sampling strategy.

3. Whether or not to allow States to waive the requirements of §141.92 for CWSs in schools and child care facilities that use and maintain filters certified to reduce lead, and if so, whether the waiver should only be allowed where schools and child care facilities are required by State or local law to install POU devices and maintain them.

Recent research has shown limitations to POU devices. These limitations must be understood. However, AIHA believes in some instances filters will be effective, however not as a long-term solution.[vi]

5. Whether EPA should require CWSs to make school and child care facility sampling results publicly available, and if so, how frequently and in what manner.

AIHA believes that all school and childcare facility sampling results should be publicly available, especially for real estate transactions.

Reporting and Recordkeeping

1. EPA is requesting comment on the expansion of the inventory reporting to include lead connectors and non-lead service lines.

AIHA recommends inventory reporting depending on an engineering study and best available practices.

2. EPA has heard concern over the ability of States to review all required site sample plans and provide approvals in time for the first tap monitoring period, and is requesting comment on whether EPA should consider a phased approach or alternate approach to reduce the burden on States following the rule compliance date.

AIHA believes flexibility should be allowable within the LCRI while maintaining the best lead sampling strategy.

3. EPA is requesting comment on whether States should be required to maintain records related to distribution system and site assessments conducted by water systems.

AIHA believes that records of any sampling and engineering assessment related to distribution systems should be maintained for an indefinite period and graphically shown over time to clearly communicate trends.

Compliance Dates

Other Proposed Revisions to 40 CFR Part 141

1. Consumer Confidence Report

a. EPA is requesting comment on the proposed requirement for systems to provide an informational statement in the CCR about the school sampling requirements with the information that consumers can contact the school or child care facility about any potential sampling results.

AIHA agrees with the proposed requirement for systems to provide an informational statement in a publicly available consumer report about school lead in drinking water sampling results with addresses and other pertinent contact information.

Conclusion

If you have any questions about AIHA's comments on this proposed rulemaking or other matters, please contact me at mames@aiha.org or (703) 846-0730. Thank you for your time and consideration.

Sincerely,

Mark Ames
Chief Advocacy Officer
AIHA

About AIHA

AIHA is the association for scientists and professionals committed to preserving and ensuring occupational and environmental health and safety in the workplace and community. Founded in 1939, we support our members with our expertise, networks, comprehensive education programs, and other products and services that help them maintain the highest professional and competency standards. More than half of AIHA's nearly 8,500 members are Certified Industrial Hygienists, and many hold other professional designations. AIHA serves as a resource for those employed across the public and private sectors as well as to the communities in which they work. For more information, please visit www.aiha.org.

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[i] Weiyi Pan and Daniel E. Giammar (2022). Point-of-Use Filters for Lead Removal from Tap Water: Opportunities and Challenges. *Environmental Science & Technology 56* (8), 4718-4720. DOI: 10.1021/acs.est.2c01415) retrieved from: https://pubs.acs.org/doi/10.1021/acs.est.2c01415.

[ii] Centers for Disease Control and Prevention. "Childhood Lead Poisoning Prevention. retrieved from https://www.cdc.gov/nceh/lead/prevention/default.htm

[iii] Congressional Research Service. Lead and Copper Rule Revisions Report to Congress: https://sgp.fas.org/crs/misc/R46794.pdf

[iv] 2016 "American Academy of Pediatrics Policy Statement on the Prevention of Childhood Lead Toxicity" retrieved from: https://www.drinkingwateralliance.org/single-post/2016/06/16/american-academy-of-pediatrics-releases-policy-statement-on-the-prevention-of-childhood-l

[v] Weiyi Pan and Daniel E. Giammar. (2022). Point-of-Use Filters for Lead Removal from Tap Water: Opportunities and Challenges. *Environmental Science & Technology 56* (8), 4718-4720. DOI: 10.1021/acs.est.2c01415

[vi] Weiyi Pan and Daniel E. Giammar. (2022). Point-of-Use Filters for Lead Removal from Tap Water: Opportunities and Challenges. *Environmental Science & Technology 56* (8), 4718-4720. DOI: 10.1021/acs.est.2c01415