

EPN Comments on Proposed Revisions of the Lead and Copper Rule

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The [Environmental Protection Network](https://www.epn.org/) (EPN) is an organization comprised of almost 500 U.S. Environmental Protection Agency (EPA) alumni volunteering their time to protect the integrity of EPA, human health, and the environment. We harness the expertise of former EPA career staff and confirmation-level appointees to provide insights into regulations and policies proposed by the current administration that have a serious impact on public health and environmental protections.

EPN recognizes that EPA's proposed Lead and Copper Rule (LCR) is attempting to accelerate the pace of progress in reducing the exposure to lead in drinking water, and supports many of the specific changes designed to improve upon the existing LCR.

To start, EPN strongly supports selected elements of the EPA proposal: (1) the improved public lead service line (LSL) inventories, replacement plans, and their public availability; (2) minimization of partial lead service line replacements (LSLRs) and elimination of testing out provisions; (3) improved site selection process for sampling in communities with LSLs and clarification of protocols; (4) improved corrosion control treatment requirements and monitoring; (5) the explicit prohibition of some forms of "gaming"; and (6) faster communication with residents whose water has action level exceedances and education of homeowners and residents regarding lead contamination and mitigation.

Despite these positive changes in the current proposal, EPN is deeply concerned that the proposed LCR fails to speed up protection of the public from the harmful effects of lead in drinking water.

Lead is a highly toxic pollutant that can damage neurological, renal, cardiovascular, immunological, developmental, and reproductive systems. The best available science supports EPA's maximum contaminant level (MCL) goal of zero lead in drinking water. Children are at higher risk from the effects of lead than adults due to differences in physiology and behavior. The following link shows blood lead levels measured in children in recent years as reported in a number of the states by the Centers for Disease Control (CDC): (<https://www.cdc.gov/nceh/lead/data/national.htm>). In 1991, the blood lead level at which public health officials were concerned dropped from 25 ug/dl to 10 ug/dl. In 2012, the CDC began recommending that parents be notified and asked to reduce lead exposures when their children's blood lead levels were at or above the reference level of 5 ug/dl (the 97.5 percentile of children's blood lead levels at that time). See the following link: (https://www.cdc.gov/nceh/lead/acclpp/lead_levels_in_children_fact_sheet.pdf)

In order to speed up protection, EPA should have considered an option to lower the action level, retain the LSL annual replacement rate, make requirements much less complex, simplify noncompliance determination and enforcement, and improve reporting. The proposed LCR does none of these things and may delay the protection of public health compared to the existing LCR.

EPN has the following recommendations to improve the proposed rule.

1. **EPN Recommends that EPA Consider Reducing the Existing Action Level from 15 ug/L to 10 ug/L and Maintaining the Annual LSLR Rate at 7%.**

EPN recommends that both to increase public health protection and to simplify the complexity of the proposed LCR, the agency should consider an option to have the proposed new 10 ug/L “Trigger” replace the existing 15 ug/L “Action Level” in all aspects of the rule. Lowering the action level would result in more systems implementing corrosion control and replacing LSLs.

It is surprising that EPA did not evaluate this option in the proposed rule because the European Union and the World Health Association already use 10 ug/L and Canada uses 5 ug/L as the target value for sampling water that is typically consumed. EPA was also fully aware that 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.

The 15 ug/L level was selected as the action level in 1991 based on the judgement that this level could be achieved consistently with proper corrosion control. It seems likely that with the experience and expertise achieved since 1991, a lower action level should be feasible. Recent studies on corrosion control suggest that an action level of 10 ug/L is a realistic objective. Here’s one study supporting this: (<https://www.waterworld.com/drinking-water/treatment/article/14075472/keeping-lead-out-of-drinking-water-when-switching-disinfectants>).

Although the proposed rule only requires full LSLR implementation when corrosion controls fail to achieve the action level of 15 ug/L, EPA does evaluate the effects of using a 10 ug/L lead concentration as a trigger level for “beginning implementation of lead service line replacement plans” and increasing customer outreach. EPA concludes in the Economic Analysis that the proposed rule increases public health protection beyond that provided by the 1991 rule, primarily because systems that exceed the 10 ug/L trigger level will implement a “goal based” LSLR program. Exhibit 5-96 on page 5-211 of the Economic Analysis compares the LSLRs expected under the 1991 rule to the replacements expected under this proposed rule. Exhibit 5-96 shows that the projected incremental increase in the LSLRs based on exceeding the 10 ug/L trigger level is 2 to 3 times higher than those based on exceeding the 15 ug/L action level. These data indicate how much more effective the 10 ug/L level is than the 15 ug/L in protecting human health.

EPN is also concerned that the proposed rule reduced the required annual rate of LSLR from 7% to 3%. EPA justifies the reduced percentage by claiming it will result in the same full service line replacement rate achieved under the 1991 rule because the proposed rule no longer allows utilities to meet the requirement by counting partial LSLRs and lines that tested out of the requirement based on subsequent monitoring. In fact, EPA has no database that allows calculation of the current rate of full service line replacements by subtracting out partial LSLRs and tested out lines. The agency is asking the public to accept its claim of equivalency without adequate supporting information. More importantly, the agency is asking

the public to agree to a very slow replacement rate without providing the costs and benefits of requiring a 7% annual rate replacement, while disallowing credit for partial LSLRs and tested out lines.

EPN recommends retaining the 7% LSLR rate to reduce lead exposures nationwide much faster. This will both increase public health protection and simplify implementation as most systems have already developed plans based on replacing 7% annually. Reducing the LSLR to 3% could theoretically extend the time period for replacement from 14 years to 33 years. No matter what time period is needed for replacement, however, a 7% rate will result in more than twice the number of replacements than a 3% rate.

In addition, EPN is concerned that the proposed rule's allowance of a 3-year period to comply can be used by systems failing to meet the current 7% replacement rate to justify an additional 3-year delay in LSLR. To prevent this, EPA must require compliance with the current LSLR during the 3-year period while a LSL inventory and replacement plan are developed under the new LCR.

In estimating the costs and benefits of this proposed rule, EPA combined the potential impacts of the trigger level with the impacts of the action level, so it is impossible for the public to see what the costs and benefits would be if an action level of 10 ug/L replaced the more complex proposal of a 10 ug/L trigger level and a 15 ug/L action level. EPA also developed all costs and benefits based on a 3% annual replacement rate, so the public cannot evaluate the impact of retaining a 7% replacement rate. EPA has models with the appropriate level of detail to provide this critical information to the public in a supplemental notice.

EPN requests that EPA publish a supplemental notice in the Federal Register that provides the costs and benefits of lowering the action level to 10 ug/L and requiring an annual replacement rate of 7% per year, and provide an opportunity for public comment on the new analyses as soon as possible. Without such a supplemental notice, the public cannot evaluate the costs and benefits of reducing lead in drinking water more quickly in more systems than this proposed rule would require. Given that it has been 28 years since issuance of the 1991 rule, it is certainly justified that EPA spend a few more months to provide critical information for a rule that may be in effect for the next 28 years.

2. EPN Recommends that EPA Modify the Proposal to Make Implementation Less Complex, Improve Compliance Determination and Enforcement of Requirements, and Strengthen Reporting.

EPN supports EPA's desire to improve the LCR. But overall, the proposal will not succeed.

Unless very specific changes are made to the final rule to simplify requirements and drive better compliance, the objectives underlying the proposal will not be achieved. Numerous studies by EPA, EPA's Inspector General, and the US Government Accountability Office (GAO) have shown that compliance with the LCR is adversely affected by water system requirements that are too complex to implement efficiently; difficult to determine noncompliance and enforcement by EPA and the state primacy agency; and unable to ensure timely, complete, and correct reporting at all levels. The revised LCR puts a gigantic burden on the

primacy states to track, train, implement, and enforce the new requirements across all the water systems, but does not provide the tools to be successful.

First, the proposal adds complexity to a regulation that is already too complex to understand and implement effectively. The proposal adds a major new trigger level exceedance in addition to the existing action level exceedance. Water systems are given multiple pathways to comply based not only on monitoring results and trigger and action level exceedances, but also on system type, system size, timing, and waiver opportunities. The water system requirements are difficult to determine due to multiple decision points, making it difficult to understand and comply with. It is a truism that complexity leads to greater noncompliance. As noted above, a single action level at 10 ug/L would streamline the two-tier approach in the proposal. EPN also recommends that the final rule take other concrete, systematic steps to simplify the requirements.

Second, the proposal does not sharply delineate when exceeding the action level becomes a violation subject to enforcement. Exceeding the trigger level or action level is not a violation. A violation occurs only when the water system fails to take actions to address corrosion control treatment, LSLR, public notification and education, and other requirements in a timely manner. Noncompliance with these subsequent requirements becomes a violation subject to EPA and state actions to compel compliance (including enforcement). The proposal is quite clear when and how often the water system must report to the state, but the resources required to determine noncompliance are excessive, especially compared to regulations with an MCL rather than a treatment technique. States and EPA will have to continue to expend too many resources to know when water systems are not complying. EPN recommends that the final proposal sharply define when the water system is in violation of the Safe Drinking Water Act (SDWA) subject to enforcement to compel compliance.

Third, the proposal adds many new reporting requirements for the water system and requires much reporting by the state to EPA under primacy. Reporting requirements are specified for tap sampling results, LSL inventory, lead trigger level and action level exceedances, school and child care facilities, and many others. The regulation specifies when the water system must report to the state, but it fails to say how that reporting is made and how the state, EPA, and the public know that the water system complied with these requirements. EPN is deeply concerned that EPA has not adequately prioritized consideration of the data management challenges associated with the reporting burden. EPN recommends that the final proposal take steps to streamline the water system reporting burden and take steps to ensure the reporting is managed well at state and EPA levels; numerous options, including unified data management systems and simultaneous reporting, are possible.

Fourth, the proposal does not address the states' extremely poor record of reporting lead rule violations to EPA or the problems states experience with under reporting by public water systems (PWS). EPA's own audits found that over 90% of the lead rule violations are not reported by states to EPA. This means that the great majority of violations of the lead rule are not included in EPA's national data and are not used in the enforcement targeting tool that is the foundation of EPA and states' work to achieve

compliance with the lead requirements. This glaring hole undermines the stated purpose of the proposed rule to improve effectiveness and strengthen enforcement.

3. EPN Recommends that EPA Add Rule Language to Clarify Three Difficulties Related to Mathematics of Sampling.

First, resampling only high values introduces a downward bias due to “regression to the mean.” This means that the results are skewed low and underestimate the actual water lead levels. EPN recommends that EPA raise a high bar before water systems are permitted to resample high lead levels and for state primacy agencies to approve such resampling. For example, resampling could be limited only to when there has been an analytical error verified by the lab.

Second, water systems should be prohibited from increasing the number of samples (i.e., “sampling out”) to reduce the 90th percentile mean lead value below the action level. EPN is aware of instances where the water system was allowed to take additional samples until the 90% reaches below the action level. EPN recommends that EPA’s final regulation explicitly prohibit this gaming to disguise potential public health issues.

Third, EPA should correct possible problems in the way the 90th percentile is calculated. The rule requires systems taking five samples to average the highest and second-highest samples to determine the 90th percentile. This is not the 90th percentile because in a distribution, the 90th percentile cannot be the average of the highest 40% of samples. Mathematically, for 5 samples, the 90th percentile 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 never quite reach the 90th percentile. This underestimates the actual lead levels, resulting in fewer systems taking action to address high lead levels and less public health protection. This is particularly significant for smaller systems taking fewer samples. EPN recommends that EPA consider using the highest (that is the 5th sample) for compliance purposes when only 5 samples are taken, since that is the 90th percentile. EPN also recommends that water systems required to take more samples also use a process that calculates the 90th percentile consistent with recognized mathematical principles.

In addressing EPN’s three major issues listed above, EPN recommends that EPA take the following steps:

- Issue a supplemental notice as soon as possible that provides the cost and benefits of eliminating the new trigger level, lowering the action level to 10ug/L, and requiring an annual LSLR rate of 7%.
- Add a section in the final rule identifying when a violation occurs after action level exceedance, if water systems actions are not done as required.
- Require drinking water systems to report electronically to a database shared by EPA and the states.
- Add language in the rule that corrects the three difficulties related to mathematics of sampling raised in item 3 above.

- Commit to a thorough 6-year review of the final LCR that collects and analyzes data on implementation, compliance with the LCR, quality and completeness of lead rule violations reported by water systems and states, and full implementation of direct reporting to a shared data system.

Finally, EPN notes that even if our recommendations are adopted, implementation of the LCR will remain a resource challenge for states, tribes, and communities. No regulation can impact behavior in our society without adequate resources to provide critical technical assistance, meaningful oversight, compliance support, and effective enforcement actions in the case of serious or persistent violations.