

# **Kentucky Lead Workgroup Comments and Recommendations on the Proposed Revisions to the Lead and Copper Rule**

**February 10, 2020**

## **1. Background Information**

Lead ingestion is a well-recognized public health concern. Over the past 30 years, actions to reduce lead exposure have been successful. In the United States, lead has been removed from paint products, toys, gasoline, and plumbing fixtures. In addition, the implementation of Safe Drinking Water Act's (SDWA) Lead and Copper Rule (LCR) has reduced lead exposure through drinking water by prohibiting the use of lead-based materials in water distribution systems and increasing water testing and remediation when encountered. Currently, all Kentucky drinking water systems are in compliance with the LCR. There have been no reported cases of lead poisoning in Kentucky where the source of lead is from drinking water. The primary source of lead exposure in Kentucky is from lead based paint used in older homes. While significant progress has been made to reduce lead exposure, as a nation we need to continue efforts.

To further our efforts to reduce lead exposure within the state, the Kentucky Division of Water established the Kentucky Lead Workgroup (Workgroup) (April 2016). The Workgroup is comprised of members from the drinking water industry, including water systems, industry associations, health professionals, academia, and regulators. The purpose of the Workgroup is to assess the current state of compliance with EPA's Lead and Copper Rule (LCR) and identify best practices for lead pipe inventory, lead treatment, and lead removal. In March 2018, the Workgroup completed its initial work and recommendations are posted on the Division of Water website:

<https://eec.ky.gov/Environmental-Protection/Water/Drinking/DWAdvisoryCouncil>

On November 13, 2019, the US Environmental Protection Agency (EPA) published proposed revisions to the LCR in the Federal Register: 40 CFR Parts 141 and 142 of the

National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions (LCRR). The Workgroup was reactivated in November 2019 to review the proposed LCRR, identify concerns, and prepare recommendations for the state, water systems, and industry stakeholders to use in providing comments to EPA by the February 12, 2020 comment deadline.

The Workgroup reviewed the proposed LCRR in areas of lead inventory, lead corrosion control, lead sampling, lead in schools and public notification. The resulting concerns and recommendations are intended to assist water systems, associations and agencies when preparing their individual responses to US EPA. It is noted that individual water systems, water industry associations, and state/local agencies may have different perspectives on the proposed LCRR.

The Workgroup recognizes and supports the need for an updated regulation for lead in drinking water. There are, however, technical, managerial and financial limitations that must be considered when implementing a comprehensive drinking water regulation. The regulation as proposed will require a significant resource allocation by drinking water systems, public health officials, education administrators and drinking water regulators. Additionally, an overly burdensome regulation will only serve to promote distrust of public drinking water and unduly alarm elected officials and the public. And finally, the proposed LCRR contains some contradictory language and the LCRR requirements may lead to unintended consequences and the ability for water systems to maintain simultaneous compliance with the SDWA and protect public health.

The recommendations included in this report promote a reasoned approach to reducing lead in drinking water. To achieve the objectives of the proposed LCRR regulation, the recommendations reflect the best practices in lead service line replacement, corrosion control treatment and tap sampling. The comments and recommendations are organized by topic area with a reference to the section identified in 40 CFR 141 to 142.

To assist with reviewing the report, it is noted that various terms that may be used interchangeably. Some of the common definitions are defined as follows:

- Public service line generally refers to the portion of the service line from the water main to the property line, and in Kentucky, many water systems have outside meter pits located at or near the property line,
- Private service line refers to the portion of the service line from the property line to the building inlet,

- Property owner is the individual or entity that owns the property and private portion of the service line,
- Customer may be the property owner or may be a tenant, occupant, family member or other individual(s) that occupy the building on the property and consumes water from the water system through the public and private portion of the service line,
- State primacy agency refers to state entity responsible for administration and enforcement of the Safe Drinking Water Act,
- Workgroup refers to the Kentucky Lead Workgroup established by the Kentucky Division of Water in April 2016.

## **2.0 Recommendations**

### **2.1 GENERAL COMMENTS**

The proposed LCRR is one of the most complex drinking water regulations in the history of the Safe Drinking Water Act. The Workgroup recognizes the need to update the existing LCR, however there are major concerns with the complexity of the proposed LCRR and the resources that will be required. Many water systems, especially small and medium sized systems, lack the technical, managerial and financial resources necessary to implement the replacement of lead service lines. State primacy agencies have limited resources and budgets to implement the proposed LCRR. The existing State Drinking Water Information System (SDWIS) does not accommodate the complex data tracking and monitoring requirements of the new rule. And finally, small water systems, public health agencies and schools will be especially challenged to meet the enhanced sampling and reporting requirements under the proposed LCRR.

Some provisions of the proposed LCRR will unnecessarily alarm the public about the safety of their local drinking water supply. With respect to sampling, guidelines for public notification are unclear and require a tiered notification to customers. And, when no information is known about a lead service line (public or private), the public must be notified of this lack of information. Without appropriate staff and a well-orchestrated communication effort, the community risk associated with lead may be misunderstood.

The EPA is encouraged to adopt revisions to the LCR that allow flexibility and consider the following: the water source, treatment capability, water system size, compliance with the current LCR, existing state regulations, simultaneous compliance with other drinking

water regulations, community affordability, environmental impact, and other regional variations. Revisions to the LCR should be developed using a collaborative approach with state primacy agencies, with regulations that allow a tool box approach to service line replacement, corrosion control treatment, and customer notification, using best practices established by AWWA, EPA and leading water systems in the United States.

## 2.2 LEAD TRIGGER LEVEL

2.2.1 *Sections 141.81 and 141.82 – Exceeding the Lead Trigger Level* – The concept of establishing a lead trigger level is beneficial for putting water systems on alert that results are approaching the action level. The Workgroup is concerned, however, that some of the actions required by the trigger level are overly burdensome and costly, when the action level is not exceeded. For instance, a water system with corrosion control treatment whose 90<sup>th</sup> percentile exceeds the lead trigger level of 0.010 mg/L, but not the action level of 0.015 mg/L, would have to study and re-optimize corrosion control treatment. This would effectively make the trigger level the new standard at which a water system would have to take further action to modify corrosion control. Further, a trigger level and an action level will become confusing to the public, making communications a challenge for public health officials. The trigger level should only be used by utilities to plan for changes in corrosion control, and not require action for re-optimization of corrosion control, replacement of lead service lines, or notification of customers. Action steps should only be required when the action level of 0.015 mg/L is exceeded.

***Recommendation: Establish a single level for action at 0.015 mg/L, while promoting corrosion control treatment to reduce levels below 0.010 mg/L. Actions steps for re-optimized treatment, replacement of lead service lines and customer notifications should only be required for water systems exceeding the action level.***

## 2.3 LEAD SERVICE LINE INVENTORY:

2.3.1 *Section 141.2 Lead Service Line definition* – the definition of a Lead Service Line (LSL) is confusing as written. The definition should clarify when a galvanized service line is considered a lead service line or EPA should consider a separate standalone definition for a galvanized service line

***Recommendation: The following revised definition should be adopted:***

*Lead service line means a service line, which connects the water main to the building inlet, comprised in any part of lead, excluding a service line where the sole component of lead is either a lead gooseneck, pigtail, or connector. A lead service line may be owned by the water system, owned by the property owner, or both.*

*For the purposes of this subpart, a galvanized service line is considered a lead service line if it is currently, or is known or likely to have been in the past, downstream of a lead service line or service line of currently unknown material. If the only lead known, presently or in the past, to be upstream of a galvanized service line is either a lead gooseneck, pigtail, or connector, then the galvanized line is not considered a lead service line. If a galvanized line is downstream of a service line of unknown material, the galvanized line shall no longer be considered a lead service line if the upstream unknown material is subsequently determined to be non-lead, unless the galvanized line is otherwise determined likely to have been downstream of a lead service line in the past.*

- 2.3.2 Section 141.84(a)(1) Inventory 3-Year Deadline and Section 141.84(a)(2) Information Available to Collect Inventory - It is not practical to develop an accurate LSL inventory within 3 years where records are not available, which is not uncommon for many water systems. In the absence of records, the only way to confirm the service line material using methods currently available is to excavate the entire line from the water main to the building inlet. Since excavation is not advised without replacement of the LSL, it is recommended that state primacy agencies be given the flexibility to allow water systems to utilize the best available information to assign an assumed material type.

The proposed rule assumes it is feasible to confirm the presence of LSLs during meter reading and meter inspections. This is not always a reliable means for determining the absence or presence of LSLs. In some water systems the LSL transitions to a riser for the meter setting where the riser is not made of lead. This situation often occurs in older water systems that did not include meters with the original installation of the lead service line. The meter was often installed near the property line, downstream from a curb stop, and was cut into the existing lead service line. Therefore the piping material used to connect the meter assembly (meter and meter setter) to the lead service line may not be lead. The presence of newer materials in the meter assembly, however, does not guarantee that it is not connected to lead on the public and/or private side due to past partial replacements, repairs to the service line or installation/replacement of meters. Undocumented materials installed during partial replacements or repairs over the

years on both the public and private side of the service line will greatly hinder an accurate identification of the service line materials in place today.

Since identifying the presence of LSLs during meter reading and meter inspections is not always reliable, it is recommended that state primacy agencies have flexibility to allow water systems to utilize existing information to assign an assumed material type.

**Recommendation: Allow the state primacy agency to establish guidelines for water systems to use in assigning material types to service lines, based on historical records, plumbing codes, work orders, field inspections, lead detection technology, and other data sources.**

2.3.3 Section 141.84(a)(3) Service Line Categorization - A reasonable and practical approach to best categorize service line materials is needed. The proposed rule envisions water systems to be able to place service lines into one of three categories:

- Made of Lead;
- Not Made of Lead;
- Unknown.

It is likely that many water systems will not have complete records on all service lines and will not be able to point to an ordinance, plumbing code, or plumbing inspection records that specify a year when lead was no longer used. It is recommended that two sub-categories of unknown be established, based on the best available information as follows:

- “Unknown – Lead Probable” as unknown material but likely to be made of lead;
- “Unknown – Lead Not Probable” as unknown material likely not to be made of lead.

***Recommendation: The following sub-category definition for unknown service line materials should be adopted:***

- i. Lead is not visually confirmed and no record on it exists but lead is highly probable to have been used in original construction based on the age of the structure it serves, and no records of lead service line replacement (LSLR) exists. In this case, the line would be assigned as being “Unknown – Lead Probable”. This sub-category would be treated the same as “Made of Lead”;*

- ii. *Non-lead materials are not visually confirmed and no record of it exists but non-lead materials are highly probable to have been used in original construction based on the age of the structure it serves or other records. In this case, the line would be assigned as being “Unknown – Lead Not Probable”. This sub-category would be treated the same as a “Not Made of Lead”.*

2.3.4 Section 141.84(a)(4) and Section 141.86 (a)(1) Inventory Update

Once the water system qualifies for reduced monitoring, EPA proposes the required inventory update frequency remains annual. EPA should allow water systems that qualify for reduced monitoring to update lead inventory every three years. The LCRR does not include regulatory language granting the state primacy agency the option to implement an LSL inventory waiver process. This is important particularly for states with few existing lead service lines and numerous small water systems, with reasonable knowledge of having no lead service lines based on the date of their construction, the use of other service line materials such as copper or plastic, and historical monitoring data with 90th percentiles below 0.015 mg/L. Flexibility for a waiver process for LSL inventories has the potential to substantially reduce the final LCRR burden on the primacy agency.

***Recommendation: Once a water system qualifies for reduced monitoring, require the service line material inventory to be updated every three (3) years for water systems that do not exceed the trigger or action level. Include regulatory language that allows the primacy to implement an LSL inventory waiver process.***

- 2.3.5 Section 141.84(a)(6) State Primacy Agency Approval – It is recommended that EPA allow the state primacy agency to allow water systems to employ sensible methods to categorize unknown lines, such as historical records, plumbing codes, work order records, field inspections, and other data sources to determine a cutoff date for the use of lead materials. Service lines installed after this cutoff date, or service lines for homes built after this date, can then be categorized as “not made of lead”. This approach would help water systems direct the proper message to each category of customer. It would also help eliminate the wasteful distribution of lead educational materials to homes that are not affected by LSLs.

***Recommendation: Allow the state primacy agency to establish guidelines for water systems to use in assigning material types to service lines, based on***

*historical records, plumbing codes, work order records, field inspections, and other data sources.*

Identification of service line materials by potholing (vacuum excavation) is costly. For outside meters, which is a common meter location in Kentucky and other states, a hole would be made on both sides of the meter. The holes would then need to be restored, which may be in a street, driveway, sidewalk, or sod. The very short section of pipe material in the relatively small hole is the only section that would be visible and may not be representative of the entire service line. The material could be different in other sections of the service line, due to partial replacement or previous repairs to the service line. There are also concerns with disturbing the scales and releasing lead during potholing. Therefore, it is recommended that potholing not be required to develop inventories, but be considered as one of several tools to use in identification of service line materials.

***Recommendation: Do not require potholing (vacuum excavation) for establishing service line material inventories.***

State primacy agencies should be allowed to establish guidelines for determining the service line material installed on the private property portion. To assist with this effort, it is recommended that EPA develop training materials, including a video, on how to properly identify LSLs. This would simplify the burden on water systems and provide consistent communication to property owners. This will provide a cost savings to water systems and reduce the risk of misclassification. Property owners who fail to respond to service line material surveys would be categorized as unknown for the private portion of the service line. When the property owner refuses to respond or cooperate with the water system, the unknown service line material should be excluded from calculations used to develop a water system's lead service line replacement rates when the property owner refuses to respond or cooperate with the water system.

***Recommendation: Allow the state primacy agency to establish guidelines for determining the service line material on private property. EPA should develop training materials for identification of service line materials on both public and private service lines. Service lines of unknown material on private property should be excluded from water system replacement rates when property owners do not cooperate with material identification.***

- 2.3.6 Section 141.84(a)(7) Public Availability of Exact Address of LSLs – The Workgroup supports EPA's alternative for posting the locations of LSLs so that specific addresses do not have to be made publicly available.



## 2.4 LEAD SERVICE LINE REPLACEMENT

- 2.4.1 Section 141.84(b) LSLR Plan – Replacement of LSLs at the same time as water mains is the most cost-effective method for a Lead Service Line Replacement (LSLR) program. If water main replacement projects are not the primary method for LSLRs, it is requested that the EPA and/or state primacy agencies develop guidance on how LSLRs should be prioritized. Replacement criteria should consider the service line age, housing stock age, repair history, lead exceeding the trigger or action level, building occupancy, replacement of the private portion of the service line, or other factors impacting public health. The absence of such guidance could be problematic for water systems.

***Recommendation: EPA, with input from state primacy agencies, should develop guidelines to be used by water systems for prioritization of replacement of lead service lines when water mains are not being replaced. Criteria includes service line age, housing stock age, repair history, lead exceeding the trigger or action level, building occupancy, replacement of the private portion of the service line, or other factors impacting public health.***

- 2.4.2 Section 141.84(d)(1)(iii) Filtering Pitchers for Partial LSLRs and Section 141.84(e)(1)(iii) Filtering Pitchers for Full LSLRs and Section 141.85(c)(5)(iii) – The Workgroup recommends EPA develop a list of approved pitchers and filters, and a replacement schedule for the filters, along with a process to add new pitchers and filters to the list, and provide guidance on what constitutes a “filter pitcher and tracking maintenance system” as mentioned in Section 141.84(b). Instead of automatically providing a filtering pitcher and filter cartridges, it is recommended these items be offered at no cost to the customer, if the customer requests it, when the LSL is partially or fully replaced and the customer refuses to replace the private LSL. If a customer is not interested in using filter pitchers, it seems wasteful to provide them. It is also recommended that delivery of filter pitchers for multi-family units be limited to a reasonable number of pitchers (i.e. one or two per building) and that the owner bear the cost of the filtering pitchers above this set number. It is also recommended that water systems be able to utilize other methods for lead mitigation such as customer installed point-of-use (POU) treatment devices, bottled water, or other methods that could be developed in the future, instead of limiting options to filter pitchers.

***Recommendation: EPA should publish a list of approved pitchers and filters provided to customers by water systems when replacing full or partial lead service lines. EPA should allow state primacy agencies to develop the guidelines for providing pitchers and filters for single family and multi-family homes and be allowed to approve alternative lead mitigation methods, including bottled water, customer installed point-of-use treatment and other approved treatment methods for removing lead.***

- 2.4.3 Section 141.84(d)(3) and (4) 45 Day Notification – The Workgroup recommends that water systems be given more than 45 days to replace its portion of the LSL when notified by a customer. Extended time may be needed to follow public procurement requirements to complete the work and for weather delays. A timeframe of 90 days is recommended with the flexibility for the state primacy agency to give more time under extraordinary circumstances (weather, emergency, etc.).

***Recommendation: EPA should allow up to 90 days to replace a lead service line requested by a customer, and allow an extension approved by the state primacy agency under extenuating circumstances (weather, emergency, etc.).***

- 2.4.4 Section 141.84(f)(1), 141.84(f)(8) Replacement Goals When Trigger Level Met – It is recommended that EPA not require a water system to replace LSLs when the 90<sup>th</sup> percentile is above the trigger level of 0.010 mg/L but the action level of 0.015 mg/L is not exceeded. If the action level of 0.015 mg/L is exceeded, a replacement rate higher than 3 percent may be appropriate if the state primacy agency and the water system agree, through a collaborative process, considering the size of the water system, number of lead service lines, financial capacity, affordability and other local factors.

***Recommendation: EPA should not require a water system to replace LSL unless the action level is exceeded and replacement rates should be determined through a collaborative process between the water systems and state primacy agency, considering the size of the water system, number of lead service lines, financial capacity, affordability and other local factors.***

- 2.4.5 Section 141.84(f)(2) Affordability of Replacement Goals Based on LSLs When Trigger Level Met or Section 148.84(g)(1) When Action Level Exceeded – This is an unfunded mandate that could be problematic for water systems with a large number of LSLs. Because the entire customer base will be paying the cost of a LSLR program, an alternative approach would be to base the annual LSLRs on the total number of customers. This would help keep LSLRs from using the

majority of a water system’s capital budget. For example, if there are 100,000 customers in a water system and the replacement rate is 1 percent of the total number of customers, then 1,000 LSLs would be replaced each year. If the estimated capital cost is \$5,000 per LSLR then 1,000 would equal \$5,000,000 a year. This could easily be 20 percent of a \$25 million annual capital budget, which would be a suitable total capital budget for an older water system of this size with aging infrastructure in need of replacement. Requiring high numbers of LSLRs could force water systems to defer other needed capital projects or to seek excessive water rate increases.

***Recommendation: Allow water systems with a large number of lead service lines (i.e. greater than 15 percent of total service lines) to develop a replacement schedule approved by the state primacy agency as a percent of total service connections.***

2.4.6 Section 141.84(g) Annual Replacement Goals When Action Level Exceeded -

The Workgroup has concerns with water systems being able to meet the replacement goals or mandatory rate because customers may not be able or willing to replace the customer-owned LSL. One Kentucky water system offering to pay 50 percent of the customer-owned LSL for customers, up to \$1,000 each, reported only a modest level (20 percent) of customer participation. For water systems not subsidizing any cost of the customer-owned LSL, the customer participation is expected to be very low. It is recommended that water systems be deemed to have met the LSLR goal or mandatory rate when only customer-owned LSLs remain and customers are not responding to a water system’s documented efforts to encourage replacement.

***Recommendation: EPA should allow water systems to have met their mandatory LSL replacement rates when they document customers have been notified and the property owner has chosen not to replace the private portion of the service line.***

2.4.7 Section 141.84(g)(7) Notification for Change in Resident Occupancy When Action Level Exceeded –

It will often be difficult to determine when resident occupancy changes. It is recommended that this special notification be eliminated and that occupants rely on the other prescribed notification requirements.

***Recommendation: Eliminate special notification for occupancy changes when lead action level is exceeded.***

2.4.8 Section 141.84(g)(9) State Determination of Shorter LSLR Schedule When Action Level Exceeded –

The Workgroup is concerned with the lack of a cap on

the potential rate of LSLR that could be set by the state primacy agency where a shorter replacement schedule is deemed to be feasible. It is recommended that this section be removed, or, at a minimum, that the EPA specify that state primacy agencies are not able to require a water system to replace more than a set percentage annually.

***Recommendation: EPA should not require a water system to replace LSL unless the action level is exceeded and replacement rates should be determined through a collaborative process between the water systems and state primacy agency, considering the size of the water system, number of lead service lines, financial capacity, affordability and other local factors.***

- 2.4.9 Section 141.85(e)(5)(ii) – Pitcher Filter for LSL Disturbance During Meter, Gooseneck, Pigtail Replacement – Expanding the mandates for water systems to provide pitcher filters for normal operational and maintenance activities would create a major concern with the current market availability of filter pitchers. Water meter replacement, for example, consists only of shutting off water for a short time and replacing the meter without any cutting of the pipe itself. One Kentucky water system replaces approximately 10,000 meters annually, around 12 percent of its total meters. A requirement to provide pitcher filters and three months of replacement cartridges after every meter replacement would amount to a significant cost burden on the water system even if it were able to procure a sufficient number of filters and cartridges. It is recommended that water systems provide a good faith effort notification during meter, gooseneck, or pigtail replacements with instructions for flushing after these activities are complete.

***Recommendation: Require water systems to make a good faith effort to notify customers to flush after replacement of meters, goosenecks or pigtail, and not require filter pitchers be provided to customers.***

- 2.4.10 Section 141.85(e)(5)(iv) – Notification Due to Disturbance of LSL – It is recommended to remove the requirement for notification due to a disturbance caused by a customer turn off/turn on of a LSL. Water systems can annually provide information about the potential for elevated lead as well as a flushing procedure and that pitcher filters not be required.

***Recommendation: Allow water systems to provide annual general information on flushing to customers when a disturbance is caused by a service turn on/turn off, and not require filter pitchers or special notification be provided to customers.***

2.4.11 Section 141.85(g)(1)(vi) – Signed Customer Letter – It is recommended that the water system be able to provide documentation that good faith efforts were made to encourage customer or property owner participation in LSLR program, and that a signed letter from each customer stating such refusal not be required. In some cases the customer may be a tenant and not be the property owner. Experience from a large water system in Kentucky, with a proactive LSLR program indicates that most customers or property owners will not respond to the water system notification and will not agree to replace the private portion of the service line, even when a subsidy is provided. It is unlikely that water systems will be able to obtain a letter from an uncooperative customer or property owner.

*Recommendation: Allow water systems to document good faith efforts to notify customers and property owners for participation in lead service line replacements on private property, and not require a signed letter from the customer or property owner.*

## 2.5 CORROSION CONTROL TREATMENT:

2.5.1 While the intent of making requirements different for water systems of varying sizes, the following sections of the proposed LCR are overwhelming, complex and quite difficult to understand. Simplification and clarification of the requirements of this section would make compliance more effective. A few examples where clarification and corrections are needed include:

Section 141.81(a)(1)(ii) – This section for large water systems without corrosion control treatment refers to section (e) of this section, but section (e) refers to small and medium water systems.

Section 141.81(b)(3)(iv) – This section needs clarification. It states “A water system is not deemed to have optimized or re-optimized corrosion control under this paragraph and shall implement corrosion control treatment pursuant to (b)(3)(v) of this section unless it meets the copper action level”.

Section 141.81(d)(1) – This section states “A water system exceeding the lead trigger level or the copper action level shall recommend optimal corrosion control treatment within 6 months after the end of the monitoring period...” while (d)(3)(i) of this section states “Large water systems that exceed the lead trigger level or copper action level shall complete the corrosion control treatment studies for re-optimization within 18 months.” These statements seem similar but stipulate different timeframes. The first statement should be clarified that a desk-top evaluation be conducted by the water system to determine optimal

corrosion control treatment and that the need for, and requirements of, a pipe loop study be determined through discussions with the state primacy agency (instead of automatically requiring a pipe loop study); and changes to corrosion control treatment be implemented on a reasonable timeframe following discussions with the state primacy agency.

Section 141.82(f)(2) – This section appears to duplicate section (f)(1) with the exception of the orthophosphate level. The Workgroup recommends that (f)(2) requiring an orthophosphate residual concentration equal to or greater than 1.0 mg/L be removed and that paragraph (f)(1) requiring an orthophosphate residual concentration equal to or greater than 0.5 mg/L be kept.

***Recommendation: Review these sections of the proposed LCR to clarify and simplify the language.***

- 2.5.2 Sections 141.81 and 141.82 – Corrosion Control Treatment (CCT) – Many water systems have optimized corrosion control treatment without the use of phosphates and some states regulate phosphate discharges into waterways. It is recommended that EPA not exclude technologies that may be available now or developed in the future for corrosion control treatment by adding a statement that other treatment options may be approved by the state primacy agency or EPA. Allow the state primacy agency to approve a treatment option if a water system can provide established optimum control treatment strategies with effective supporting data. To help with the economic burden it is recommended that water systems with similar source and treated water be allowed to share and use the results from the corrosion control study. Further, the EPA should clearly define source water and treatment changes that trigger a CCT study (i.e change in pH, change in chloride to sulphate ratio, change in coagulant, etc.).

***Recommendation: Allow EPA and state primacy agencies to approve CCT methods and technologies that may be developed in the future. and allow water systems with the same or similar water source and treatment method to share and use the corrosion control study to select the best CCT method. EPA should clarify the types of changes in source water and treatment that will trigger a CCT study.***

- 2.5.3 Section 141.81 and 141.82 - Corrosion Control Treatment (CCT) – The proposed rule does not consider the impact of mandating phosphate corrosion control and the potential impact with some state limitations on phosphate discharges under the Clean Water Act. The addition of a phosphate-based corrosion control inhibitor could result in the required installation of additional nutrient removal treatment.

Further, simultaneous compliance with the SDWA should be considered when mandating phosphate corrosion control.

***Recommendation: EPA should take a holistic approach for the final LCRR that takes into consideration simultaneous compliance with all drinking water regulations, as well as with regulations for wastewater discharges required under the Clean Water Act. EPA should make a more realistic assessment of Clean Water Act implications if the agency considers mandating the addition of phosphate-based corrosion inhibitors in the final LCRR.***

- 2.5.4 Section 141.82(j) and 141.87(g) – Find and Fix Water and Quality Parameter Site  
– As currently drafted, the proposed rule implies that a water system would have to make a separate determination on potential corrosion control changes for each individual tap sample that is detected above the action level. Water systems should be allowed to make a single determination of recommended changes to CCT at the end of the monitoring period based on a compilation of all information gathered. From a practical standpoint, CCT should be managed at the treatment plant and through operational best practices in the distribution system, and not on the results from a single tap sample. The reference in the rule to “localized corrosion control treatment” implies that water systems are expected to build chemical feed stations for corrosion control in various locations throughout the distribution system. If the intent of the proposed rule is to build remote treatment systems, these will be challenging to operate, maintain and secure.

Additionally, the proposed rule could be read to direct a water system to establish a new permanent water quality testing site nearby to each sampling site that was found to exceed the lead action level. The state primacy agency should have flexibility to work with the water system to collect representative samples and that the requirement to collect the water quality parameter sample on the same size water main located within one half mile of the original sampling location, within five days of receiving the original sampling results, be removed from the final rule. An alternative approach is for the state primacy agency to allow water systems to collect the water quality sample at the same time and same location as the follow-up lead tap sample.

Water quality parameter sites added under the find and fix approach should not be automatically added to the list of sites to be sampled in future monitoring. As an alternative approach, EPA should allow state primacy agencies to review the water system’s existing and newly added water quality parameter sites and select only those sites for future monitoring that provide beneficial information.

*Recommendation: Clarify the find and fix section of the proposed LCR to allow state primacy agencies to establish guidelines to address localized issues with elevated lead levels, including localized treatment, monitoring, sampling and corrective action to suit the unique parameters of the site.*

- 2.5.5 Section 141.82 – Find and Fix Water and Quality Parameter Site - Under the Find and Fix section of the proposed LCR, the initial sample (5 days) and follow-up samples (30 days) should be taken at the same location.

*Recommendation: The initial water sample (5 days) and the follow-up sample (30 days later) should be taken at the same location.*

## 2.6 TAP SAMPLING:

- 2.6.1 Section 141.86(a)(3) – Tier 1 Sites – LSLs Where Only Customer-Owned Portion Is Lead - There are multiple water systems across the United States, including water systems in Kentucky, that have been working for many years to remove both the customer-owned (private) and utility-owned (public) portions of LSLs. These water systems have been successful in removing the utility-owned (public) portion of the LSL but have encountered significant customer resistance in removing the customer-owned (private) portion of the service. As referenced in the “Replacement” section (Section 2.4.6), one large water system offering to pay 50 percent of the customer-owned (private) LSL, up to \$1,000 each, reported only a modest level (20 percent) of customer participation. For water systems not subsidizing any cost of the customer-owned (private) LSL, the customer participation is expected to be very low. Even for water systems that legally could subsidize the entire portion of the customer-owned LSL, many customers will not want them replaced. This first hand experience shows that it will be difficult, if not impossible, for water systems to comply with this rule if only the customer-owned (Private) LSL remains in the water system. While customer education and communication concerning the need to remove the customer-owned (private) portion of the lead service is important, it should also be recognized that water systems have no control or capability to have private service lines replaced. Therefore, the Workgroup recommends that water systems should work in coordination with state and local agencies to address customer-owned (private) LSLs through targeted annual public education. Including such sites in the Tier 1 pool would create compliance issues for which water systems have no legal authority to resolve or mitigate and could unfairly burden water



systems and communities especially if trigger level and action level exceedances occur. Therefore, service lines of unknown material or private service lines with only the customer-owned portion being identified as lead should not be used as Tier 1 sample sites. As an alternative approach to excluding all customer-owned service lines from Tier 1 sampling, it is recommended that state primacy agencies have the flexibility to exclude from Tier 1 sampling those sites where the water system can provide documentation that a good faith effort was made to encourage replacement and that the customer refused to replace the private customer-owned LSL.

***Recommendation:*** Change the last sentence of Section 141.86(a)(3) to read: “Service lines of unknown material or service lines with only the customer-owned (private) portion of the service line being identified as lead are not to be used as Tier 1 sampling sites” or allow state primacy agencies flexibility to exclude from Tier 1 sampling those sites where the water system can provide documentation that a good faith effort was made to encourage replacement and that the customer refused to replace the private customer-owned LSL

- 2.6.2 Section 141.86(b)(1) – First-Draw Tap Samples – The Workgroup agrees with EPA’s belief that the first liter tap sample is effective. This will minimize the potential for error in the sample collection. The reference to paragraph (b)(5) in this section (and in section 141.86(b)(2)) does not seem to make sense.

***Recommendation:*** *First draw samples should be defined as the first liter sample.*

- 2.6.3 Section 141.86 (b)(2) – Non-First Draw Tap Samples - For the First Draw tap samples, add the phrase “water that is typically drawn for consumption” to the sentence, “First-draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap.” With the addition of this phrase, it will help assure that the customer does not collect a sample from a tap that is not frequently used. Also clarify the reference in this section to “Non-first-draw tap samples collected in lieu of first-draw samples pursuant to paragraph (b)(5).” The reference (b)(5) does not exist in the section of the regulation.

***Recommendation:*** *Clarify Section 141.86 (b)(2) by changing the sentence to read “First-draw samples from residential housing shall be collected from cold water that is typically drawn for consumption, a kitchen tap or a bathroom sink tap.” Clarify the section on non-first draw samples to non-first draw samples in lieu of first-draw samples with the addition of the reference (b)(5).*

- 2.6.4 Section 141.86(e) - Customer Requested Samples - It is recommended that EPA revise the statement in this section to not include customer requested samples in the determination of the calculation of the 90<sup>th</sup> percentile. Customer requested samples are not part of the state primacy agency approved sample site plan.

***Recommendation: Do not include customer requested sample results in the determination of the 90<sup>th</sup> percentile, since they are not part of the state primacy agency approved sample site plan.***

- 2.6.5 Section 141.85(d)(2)(ii) – Notification of Results - It is requested that EPA provide guidance on what is considered acceptable time notification of results over 0.015 mg/L. For example, what if a customer cannot be reached by phone, email, or in person? Options for confirmed receipt of notification within 24-hours are limited. It is recommended that water systems be required to attempt to notify the customer as soon as practical using customer's preferred method of communication and to extend the customer notification requirements from 24 hours to two (2) business days to accommodate accurate communication to customer, considering weekends, holidays, weather or other emergency conditions. EPA should recognize that exceeding the lead action level is a chronic health concern and not an acute health violation. Exceeding the action level should not be considered a Tier 1 health violation. Adequate time should be allowed to notify customer, considering the extent of lead level, the time to obtain lab results, and provide for holidays and weekends.

***Recommendation: Allow customer notifications of results exceeding the action level of 0.015 mg/L within two (2) business days.***

- 2.6.6 Section 141.85(e)(2) – New Customer Notification of LSL – It may be difficult for water systems to implement a reliable process that automatically determines when a new customer moves into a building with a LSL. The Workgroup recommends that this special notification be eliminated and that occupants rely on the other prescribed notification requirements.

***Recommendations: Remove the requirement for special notification for new customers.***

- 2.6.7 Section 141.85(e)(5)(i) – Notification of Disturbance of LSL – If a water system merely shuts off and then turns on a LSL, such as a customer requested move-out, move-in, or for reinstatement of service following a payment delinquency, it is recommended that special notification be removed and that annual customer communication be used to educate the customer on the potential for elevated lead

in drinking water as well as recommendations for flushing to remove particulate lead.

***Recommendation: Allow water systems to provide annual general information on flushing to customers when a disturbance is caused by a service turn on/turn off.***

- 2.6.8 Section 141.80 - 141.80(h)(3) – Notification Following Lead Action Level Exceedance – This section references subpart Q which incorporates exceedance of the lead action level into the Tier 1 notification requirements, which require notification of customers within 24 hours. Exceeding the action level should not be considered a Tier 1 health violation. For effective customer notification, 24 hours should be extended to two (2) business days to accommodate weekends and holidays..

***Recommendation: Allow customer notifications of results exceeding the action level of 0.015 mg/L within two (2) business days.***

## **2.7 TESTING IN SCHOOLS AND CHILD CARE FACILITIES:**

- 2.7.1 Section 184.92 – Testing in Schools and Child Care Facilities –The Workgroup supports the proposed rule’s alternative option of voluntary testing in schools and child-care facilities. The Workgroup also supports water systems encouraging school and licensed child-care facility administrators to pursue the testing of drinking water in those facilities and that procedures should follow EPA’s recommendations in its *3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities* manual.

***Recommendation: Adopt a voluntary program for lead testing in schools and child care facilities and reference the EPA’s 3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities for voluntary programs.***

- 2.7.2 Sampling in Schools - When it comes to collecting samples, analyzing samples, and interpreting results and follow-up actions at the school and child care facility, it is recommended that each water system be permitted to choose its level of partnership, based on resource availability, size, age and type of school or child-care facility.

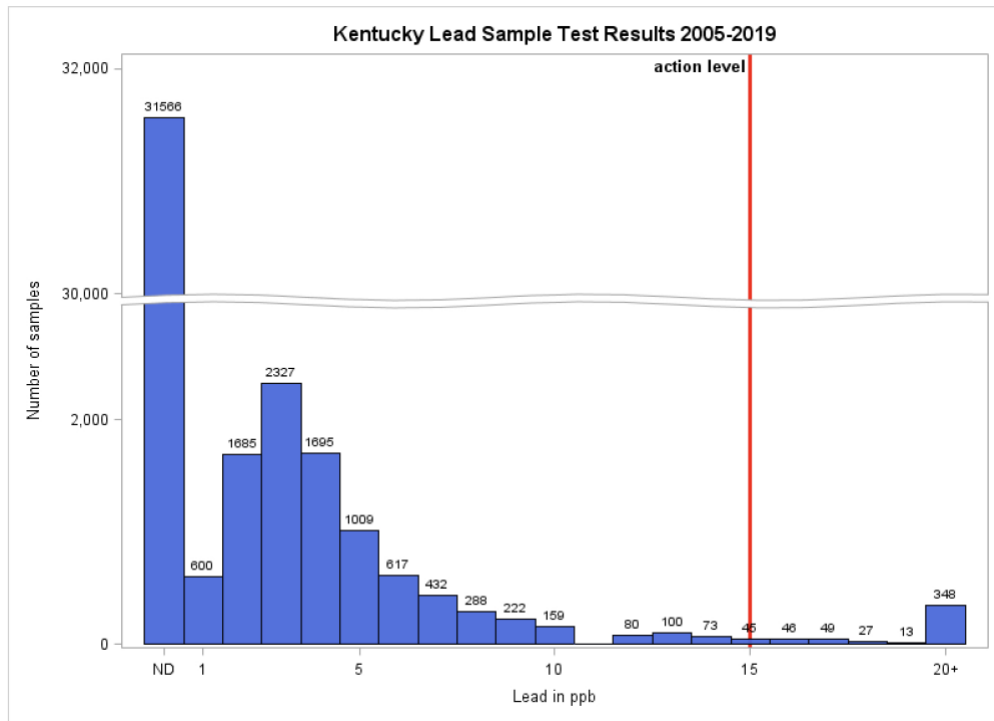
*Recommendation: Allow water systems to establish a defined level of partnership for testing in schools, based on the available resources and the age, size and type of school or child-care facility.*

- 2.7.3 Mandatory School Testing - Should EPA proceed with requiring water systems to complete mandatory school and child care facility testing, the Workgroup recommends the appropriate state educational agency in coordination with the state primacy agency be charged with the oversight of the school testing program. The responsible educational agency can best prepare a list of schools and child care facilities that should be tested annually. Schools and child care facilities should be responsible for testing and notification, in coordination with the water provider.

*Recommendation: If a mandatory school testing program is required by EPA, the responsibility should be placed on the appropriate state, local, educational and regulatory agencies to administer the lead testing program in coordination with the local water provider.*

## 2.8 SMALL SYSTEM FLEXIBILITIES:

- 2.8.1 Section 141.93 - Small and Medium System Challenges – Kentucky has 432 public water systems, of which 325 serve less than 10,000 people (approximately 3,300 service connections). As of December 2019, all Kentucky water systems were in compliance with the current LCR. From an analysis of over 41,000 water samples from 2005 to 2019, less than 1.2 percent water samples had lead levels exceeding the 0.015 mg/L and the majority (97 percent) of samples had less than 0.010 mg/L, as shown in Exhibit 1.



*Exhibit 1 – Kentucky lead sample test results from 2005-2019 (Source: Ky Division of Water)*

While the overwhelming test results in Kentucky indicate lead levels less than 0.010 mg/L, Kentucky’s small and medium water systems (serving fewer than 10,000 people or fewer than 3,300 connections) will have significant challenges in meeting the proposed LCRR, including the following:

- The proposed LCRR states Tier 1 sampling protocol will remove copper service lines with lead solder and only include lead and galvanized service lines (including public and private portion of the lead service line). This is expected to increase the occurrences of non-compliance at the lead action level of 0.015 mg/L in some small and medium water systems;
- The lead trigger level of 0.010 mg/L will be especially challenging for small and medium systems, as they often lack the capacity to conduct corrosion control treatment studies and implement corrosion control. Many small water systems do not treat water and does not have the managerial and technical capacity to treat water from a larger water system;
- Small and medium sized systems do not have the resources to operate remote or localized treatment systems to reduce lead, nor the resources to administer customer POU treatment (pitcher filters, bottled water, or other POU devices);

- Small and medium sized systems do not have the financial resources to replace lead and galvanized lines;
- Small and medium sized systems do not have the administrative resources for managing a complex program to comply with the proposed LCRR, including the technical and managerial resources to effectively communicate to customers;
- Small and medium sized systems do not have the resources to manage a school and child care testing program.

***Recommendation: EPA should consider the significant impact of the proposed rule on small and medium sized water systems and adjust the LCR requirements for these water system considering the availability of technical, managerial and financial resources. Further, EPA should provide resources (technical, managerial and financial) for small and medium sized water systems to manage the lead program. EPA should also provide grant funding to states for administration of the proposed LCRR for small and medium sized water systems.***

## 2.9 ECONOMIC ANALYSIS

- 2.9.1 Cost of On-site Treatment Systems - The Workgroup is concerned whether the economic analysis considered the cost for installation of on-site treatment systems by customers for removal of phosphorous at levels above what can be tolerated by sensitive consumers. Examples include aquariums, home health requirements and some manufacturing processes.

***Recommendations: Consider the impact of on-site water treatment by customers with special water quality requirements, such as for aquatic life (aquariums), individual home health, and manufacturing.***

- 2.9.2 State Primacy Agency Costs – according to the Costs of State Transactions Study (CoSTS) conducted by the Association of State Drinking Water Administrators (ASDWA), updated in 2020, in response to EPA’s LCR Federalism Consultation, state primacy agencies will have an increased workload from this regulation of up to 790,000 staff years annually over and above resources needed for management of the current rule. This is estimated to be 10 times greater than resources needed to manage the current LCR. CoSTS estimates a significant increases in the number of hours necessary for state primacy agencies to track submissions,

provide technical assistance, notify water systems that have missed submission, and start enforcement actions for each of these categories:

- Regulatory start-up,
- Lead service line inventories, replacement plans, and replacements,
- Tap sampling,
- Trigger level and action level exceedances,
- Corrosion control treatment, including water quality parameter monitoring,
- Sampling site assessment (called Find and Fix in the proposed LCRR),
- Small water system flexibility,
- Change in source or treatment, and source water monitoring and treatment,
- Public education and transparency,
- Lead testing in schools and child care facilities,
- SDWIS, data tracking and primacy agency reporting.

The proposed rule changes can easily double the current staff workload, which will increase the need for hiring new staff to work on LCR compliance and monitoring. In addition, a significant area of concern is the capability of existing SDWIS/State database to properly manage the proposed LCRR. States will need to modify their existing information systems, which would impose a significant financial and resource burden. The final LCRR should simplify the regulatory burden for primacy agencies.

Assumptions in EPA's economic analysis are potentially an issue. Specifically, the cost burdens associated with modifying data systems may be understated and require contract support to the state primacy agency. The lack of certainty over EPA's plans to modify SDWIS to manage the LCRR is a significant concern. The "Derivation of Administrative Burden and Costs" spreadsheet for the proposed LCRR accounts for 520 staff hours per state to modify existing data systems in-house and without factoring the need for contract support. It remains unclear if this cost estimate is based on EPA first making modifications to SDWIS, with the remaining 520 staff hours accounting for additional modifications to interfacing applications at the state.

***Recommendation: EPA should provide additional context for the cost estimation for modifying data systems, including a commitment to develop a supporting module for SDWIS in advance of the LCRR implementation date.***

## 2.10 STATE PRIMACY AGENCY CONCERNS WITH SDWIS

2.10.1 Kentucky relies on SDWIS/State for compliance determinations and reporting, storing public water system facility data, tracking monitoring schedules, and keeping the public informed of the quality of their drinking water. The current software is fast approaching the end of its useful life, leading to a growing number of security concerns and further requiring that state primacy agencies employ workarounds to perform necessary business functions, including management of the current LCR. Relying on state-level workarounds for managing the final LCRR is untenable for successful LCRR implementation. Additional record keeping and reporting requirements under the LCRR are not currently supported by SDWIS and will require further modifications, such as, but not limited to:

- Tracking two different levels for one analyte – trigger level and action level;
- Tracking lead service line inventories and updated compliance sampling plans;
- Tracking lead service line replacement programs;
- Tracking CCT studies, their status of completion, and validity over time;
- Tracking public notification.

SDWIS/State was not designed to provide data management for the provisions of the proposed LCRR. The absence of adequate data management tools will make it necessary to enter, maintain, and track data in databases that are external to SDWIS without the full capabilities of tracking compliance or scheduled activities. This is a major concern for state primacy agencies, since external databases to SDWIS will risk data quality and allow inefficiencies with fractured data systems. Additionally, state primacy agencies will be forced to implement data management strategies without the benefit of standardized systems leading to inconsistent implementation and data tracking nationwide.

***Recommendation:* EPA should commit to continued support for SDWIS/State, beyond planned security patches, until a new strategic approach to SDWIS modernization is established, or development of SDWIS Prime is completed. Within six months of the publication of the rule, conduct a robust evaluation of SDWIS/State’s capability to manage the final LCRR, or communicate plans to develop a supporting module in advance of the implementation date. Additionally, within six months of the publication of the rule, communicate to state primacy agencies the schedule for planned**



**upgrades to impacted systems that will be modified to comply with new reporting and record keeping requirements under the final LCRR. EPA should build all necessary functionality to manage the final LCRR into SDWIS to reduce the need to track required data manually, or outside of SDWIS.**

### **3.0 Kentucky Lead Workgroup Membership**

The Kentucky Lead Workgroup is comprised of volunteers from water systems, industry associations, academia, engineering professionals, health agencies, and regulatory agencies. The following Workgroup members, sub-team members and meeting participants assisted with reviewing the proposed revisions to the Lead and Cooper Rule and providing comments and recommendations for water industry stakeholders to use in responding to EPA by the February 12, 2020 deadline. Questions or comments regarding these recommendations should be directed to Greg C. Heitzman, Chair of the Kentucky Lead Workgroup, [gheitzman@bluewaterky.com](mailto:gheitzman@bluewaterky.com).

#### **3.1 Workgroup Members**

Greg Heitzman, Bluewater Kentucky, Chair  
Jenifer Burt, Kentucky Department of Health  
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Mike Gardner, Bowling Green Municipal Utilities  
Alicia Jacobs, Manager, Drinking Water Branch, Kentucky Division of Water  
Ron Lovan, Northern Kentucky Water District  
Brad Montgomery, GRW Engineering representing ACEC-KY  
Bill Robertson, Paducah Water Works  
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#### **3.2 Sub-Team Members and Meeting Participants**

Amber Agee, Kentucky Department of Health  
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Terry Humphries, Kentucky Division of Water  
Kelleé Husband, Kentucky Division of Water  
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Amy Kramer, Northern Kentucky Water District/KY-TN AWWA  
Gary Larimore, Kentucky Rural Water Association  
Arianna Lageman, Kentucky Rural Water Association  
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Russ Neal, Kentucky Division of Water  
Kim Padgett, Kentucky Regional Community Assistance Program  
Todd Ritter, Kentucky Rural Water Association  
Russ Rose, Oldham County Water District  
Kay Sanborn, KY-TN AWWA  
Gabe Tanner, Kentucky Division of Water  
Mary Carol Wagner, Northern Kentucky Water District  
Rita Wright, Fouser Environmental Lab  
Eric Zhu, PhD, Louisville Water Company

## **4.0 Key Resources**

### **4.1 Proposed Rule**

National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions (EPA, 2019)

National Primary Drinking Water Regulations: Lead and Copper Rule Revisions – Comment Period Extension (EPA, 2019)

Proposed Lead and Copper Rule Revisions, What Could It Mean for Water Systems? (AWWA, 2019)

### **4.2 Important Supporting Documents for Rulemaking**

Economic Analysis for the Proposed Lead and Copper Rule Revisions (EPA, 2019)

### **4.3 Rule Development Background**

Children’s Lead Exposure: A Multimedia Modeling Analysis to Guide Public Health Decision-Making (Environmental Health Perspectives, 2017)

Controlling Lead and Copper Rule Water Quality Parameters (Journal 2015)

Lead and Copper Rule (EPA)

Lead and Copper Rule Revisions White Paper (EPA, 2016)

Lead and Copper Corrosion: An Overview of WRF Research (Water Research Foundation, 2019)

NDWAC Recommendations to the Administrator for the Long-Term Revisions to the Lead and Copper Rule (LCR) and Past Meeting Summaries (NDWAC, 2015)

Optimal Corrosion Control Treatment Evaluation Technical Recommendations (EPA, 2019)

Strategies for assessing optimized corrosion control treatment of lead and copper (Journal AWWA, 2013)

#### **4.4 Schools and Childcare Facilities**

3Ts for Reducing Lead in Drinking Water Toolkit (EPA, 2018)

Help Schools/Child Care Centers (AWWA, 2018)

Lessons Learned from Helping Schools Manage Lead in Drinking Water to Protect Children's Health (AWWA, 2018)

#### **4.5 Additional Resources**

AWWA C810-17 Replacement and Flushing of Lead Service (AWWA, 2017)

Lead Service Line Replacement Collaborative