

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH



Raul Pino, M.D., M.P.H.
Commissioner

Dannel P. Malloy
Governor
Nancy Wyman
Lt. Governor

March 8, 2018

Mr. Peter Grevatt
Director, Office of Ground Water and Drinking Water
USEPA
1200 Pennsylvania Ave, Mail code 4601M
Washington, DC 20460

SUBJECT: Connecticut DPH Comments - EPA's Draft Revisions to the Lead & Copper Rule

Dear Mr. Grevatt:

The Connecticut Department of Public Health (CTDPH) is completely committed to assuring public health protection and ensuring that public drinking water consumed in the state of Connecticut is safe. That commitment and responsibility has been carried forward by our Department since 1976 when CTDPH first accepted primacy for the Safe Drinking Water Act (SDWA). These commitments were relayed to EPA in letters dated March 30, 2016 and September 7, 2016. While the EPA considers significant modifications to the Federal SDWA Lead and Copper Rule, we greatly appreciate this opportunity to provide to you our thoughts, ideas and information for your consideration.

CTDPH is fully committed to primacy under the SDWA and carrying out its responsibilities of the Act including the provisions of the Lead and Copper Rule for over 1,058 public water systems in Connecticut. The resources needed to meet these responsibilities are immense and therefore any amendments to the Lead and Copper rule must recognize the States' limitations and must ensure a balanced approach among all stakeholders.

We are very appreciative of EPA's recent outreach to the States, the Association of State Drinking Water Administrators and others for input and comments on the approach that EPA should consider for the revisions of the Lead and Copper Rule. Connecticut DPH comments are hereby attached for your consideration and use.



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We encourage EPA to support Connecticut in maintaining this level of essential protection and look forward to working with EPA with a focus on public health to identify strategies that will improve the Lead and Copper Rule.

Sincerely,



Lori Mathieu
Public Health Section Chief

Attachments

Cc: Yvonne Addo, Deputy Commissioner, CTDPH

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DRINKING WATER SECTION

TO: U.S. Environmental Protection Agency

FROM: Connecticut Department of Public Health
Drinking Water Section

DATE: March 1, 2018

SUBJECT: Comments Regarding the U.S. Environmental Protection Agency's
Proposed Revisions to the Lead and Copper Rule

On January 8, 2018, the U.S. Environmental Protection Agency (hereinafter "the EPA") requested written comments from the states regarding EPA's proposed revisions to key areas of the federal Lead and Copper Rule (hereinafter "the New LCR"). Specifically, EPA provided to the states key questions in five key areas of the LCR. The five key areas for which EPA requested comments regarding potential revisions to such areas are lead service line (hereinafter "LSL") replacement, corrosion control treatment, transparency and public education, tap sampling, and copper. The following are the Connecticut Department of Public Health's (hereinafter "the CTDPH") general comments with respect to the proposed revisions to the New LCR, as well as the CTDPH's specific comments in response to questions with respect to each of the five key areas of the New LCR:

I. General comments:

- A. The CTDPH recommends that the EPA in the New LCR should require that each community and non-transient non-community water system (hereinafter "system") produce a comprehensive lead reduction and removal plan (hereinafter "the Reduction and Removal Plan"). The goal of the Reduction and Removal Plan should be to remove all lead from the system, as well as from customers' homes and buildings, by 2050. Step 1 of the Reduction and Removal Plan should state what the system will do prior to 2050 with respect to treatment for lead reduction and the portion of the distribution system owned by the system. Step 2 of the Reduction and Removal Plan should address what the system will do with respect to the parts of the system that they do not own, including customers' lead service lines and faucets and solder within customers' homes and buildings.
- B. The CTDPH recommends that the EPA in the New LCR should require systems to provide to their customers public education material that includes in it schematics of buildings and homes showing the areas where lead may be found, such as in lead service lines and faucets and solder



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containing lead, as well as information regarding lead and all of the areas within a distribution system, including both the portion owned by the system and the portion owned by the customer, where lead may be found. Such material should be presented in different languages.

- C. The CTDPH recommends that the EPA in the New LCR should require schools and daycares, including those that are systems and those that are customers of systems, to prepare a water management and lead removal plan (hereinafter “Management and Removal Plan”). The CTDPH envisions the Management and Removal Plan to be very similar to the water management plans that the Centers for Medicare and Medicaid Services is requiring all healthcare facilities to prepare to reduce the risk for Legionella. The following is the link to a guide prepared by the Center for Disease Control: <https://www.cdc.gov/legionella/downloads/toolkit.pdf>. The Management and Removal Plan should assist the school and daycare in identifying all of the locations within the system in which lead may be found. In addition to requiring school and daycares to prepare Management and Removal Plans, the CTDPH recommends that the EPA in the New LCR require the systems that serve the schools and daycares provide to them technical assistance, as well as assistance with obtaining funding for the removal of lead from the plumbing system within their buildings.
- D. The CTDPH is concerned that any changes to the LCR will result in a significant increase in the workload of its staff. Following the Flint, Michigan incident, the CTDPH focused on lead being an acute risk, which greatly increased its workload and significantly hampered the CTDPH’s ability to address other rules, such as the federal Revised Total Coliform Rule. The CTDPH learned from the Flint, Michigan incident that it needs to approach the implementation of the LCR with more depth and understanding. By approaching the LCR in this way, staff time with respect to the other federal drinking water rules naturally diminished. Therefore, the CTDPH recommends that the EPA carefully consider both the time and fiscal impact to the states’ drinking water programs that will result from the changes made in the New LCR.

II. Comments with respect to each of EPA’s five key areas:

A. LSL Replacement

1. Should the New LCR require systems to create an inventory of LSLs?

The CTDPH recommends that the New LCR require systems to create inventories of LSLs and to submit such inventories to the states in electronic versus in paper form. To enable systems to submit this information electronically, the CTDPH recommends that EPA upgrade SDWIS to enable the migration of the LSL information as this will reduce a significant amount of work load on the state agency, where limited staff is available for increased work load to implement and enforce all the federal Safe Drinking Water Act (hereinafter “SDWA”) rules.

In addition, the CTDPH recommends that the New LCR require systems to disclose LSL information, when such property is served by a LSL, to the current and to future property owner. The CTDPH also recommends that the New LCR require systems to provide lead public education materials to such property owners as this may lead the property owners to replace their LSLs. Requiring each system to have a LSL inventory is necessary for the system’s to conduct replacements proactively, perform corrective actions and to educate the public regarding lead in drinking water and its health effects.

2. Should the New LCR require proactive full LSL replacement on a specified schedule (e.g., 10, 15, 25, 35 years from promulgation)?

While the CTDPH recommends that the New LCR require full LSL removal and replacement, it is concerned that enforcement will be difficult. The CTDPH is also concerned that there is no funding for either the systems or the customers served by such LSLs to remove and replace the lines. The CTDPH therefore recommends that EPA in the New LCR require systems to establish a reserve fund for water system infrastructure improvements, including LSL replacements.

The CTDPH recommends that the EPA identify additional sources of funding for both systems and their customers and make applying and obtaining Drinking Water State Revolving Fund (DWSRF) funding for small systems easier and less cumbersome. For example, perhaps small systems and customers could use mortgage and home improvement loans with low interest rates to fund LSL replacement, or the EPA could work with other agencies, such as the Department of Housing and Urban Development (hereinafter "HUD") and the Department of Education, on programs for funding full LSL replacement, as well as replacement of internal plumbing with lead solder. With respect to small systems, applying for and obtaining DWSRF funding is difficult as the DWSRF has many strict requirements. Obtaining funding from the DWSRF with its strict requirements is difficult for small water systems.

3. Should the New LCR allow partial LSL replacement only for emergency repair or "unwilling or unable customers" when conducting infrastructure replacement (e.g., main replacement)?

The CTDPH recommends that the New LCR allow partial LSL replacement only for when the system is making emergency repairs or conducting infrastructure replacement (e.g., main replacement) and there are customers that are unwilling or financially unable to replace their LSL (hereinafter "unwilling or unable customers"). In the New LCR, the EPA should require that the system obtain from the unwilling or unable customer a certification signed by the unwilling or unable customer in which such customer certifies that he does not want to have his portion of the LSL replaced. In addition, the CTDPH recommends that the New LCR make clear that such unwilling or unable customer is responsible for purchasing, maintaining and replacing his own pitcher filters for lead removal. It would be difficult for the states to ensure systems are purchasing, maintaining and replacing filters for such customers, and enforcing if they are not, if the New LCR requires the system to purchase, maintain and replace such filters. The CTDPH also recommends that the New LCR require systems to provide information to such unwilling or unable customer regarding the use of best practices and technologies for alleviating aging or stagnant water at the tap and the replacement of all fixtures with fixtures that meet the "lead free" standard, which requires that the fixture have a weighted average lead content of 0.25 percent lead or less. Finally, the CTDPH recommends that the New LCR require that systems provide public education material to customers on how to reduce lead exposure after LSL replacement.

4. Should the New LCR require pitcher filters to be distributed and regularly maintained by the system for three months immediately following lead service replacement?

The CTDPH recommends that the New LCR require systems to purchase and distribute pitcher filters to customers for lead removal after a full-LSL replacement. However, with respect to maintaining or replacing such pitcher filters, the CTDPH recommends that the New LCR require the customer, not the system, to be responsible for such maintenance and replacement of filters. It would be difficult for the states to ensure systems are maintaining and replacing filters for such customers, and enforcing if they are not, if the New LCR requires the system to maintain and replace such filters. The CTDPH also recommends that the New LCR require that systems provide public education material to customers on how to

reduce lead exposure after LSL replacement. Otherwise, it will be very difficult for the state agency to enforce and to keep track without additional staff and additional funding.

The CTDPH also recommends that the EPA provide a list of acceptable pitcher filters for lead removal. This will assist the systems, the states, and the public greatly.

B. Corrosion Control Treatment

- 1. Should the New LCR target systems required to install corrosion control treatment differently by either changing the current system size threshold (50,000 people served), thereby requiring systems that serve less than 50,000 to install corrosion control treatment, or by requiring systems with LSLs (regardless of population served) to install and maintain corrosion control treatment?**

If the EPA in the New LCR requires systems serving less than 50,000 or systems with LSLs to install corrosion control treatment, the CTDPH's workload will increase significantly, as will the workload of all states, due to increased implementation and monitoring requirements and increased enforcement as a result of an increase in systems required to install corrosion control treatment. The EPA needs to consider the impact the installation of such corrosion control treatment will have with respect to a systems simultaneous compliance with other SDWA rules, such as the Disinfectant Byproducts Rule and the Revised Total Coliform Rule, due to the addition of new treatment. The EPA also needs to consider the impact on states as the states will be required to provide technical assistance to the systems and enforcement for any noncompliance due to the addition of new treatment. As such, if the EPA requires either of these target systems to install corrosion control treatment, the CTDPH requests that additional federal funding be provided to the states so that the states can provide the needed technical assistance and enforcement.

In addition, according to a presentation given by Mike Schock, Chemist, EPA Office of Research and Development, on January 17, 2018, as part of the AWWA Webinar: Lead and Copper Corrosion 101: Principals and Guidance (hereinafter "Mike Schock's January 2018 Presentation"), treatment for systems with LSLs may not be effective if the treatment is not operating within specific ranges due to the complexity of corrosion chemistry, changes in water quality, and different types of surface fouling conditions. In addition, corrosion chemistry may differ in homes with different piping and joint materials, such as lead solder and other piping material with high lead content, than LSLs. Therefore, requiring the installation of corrosion control treatment based on the presence of LSLs may not be effective in controlling lead releases for the entire system.

Rather than targeting systems based on population served or the existence of LSLs in their distribution system, the CTDPH recommends that the New LCR require corrosion control treatment at all entry points for systems that have a lead exceedance. The CTDPH also recommends that the New LCR provide standards for these systems to implement and maintain their treatment systems. It is the operational range for treatment and maintenance that are the critical factors to effective corrosion control.

- 2. Should the New LCR require that plumbed in point-of-use treatment devices be provided to households with LSLs and that such treatment devices be regularly maintained?**

Due to fouling problems and the maintenance required for optimum reliability, the CTDPH recommends that the EPA only consider requiring the use of point-of-use treatment devices for short periods of time while systems implement more reliable technologies. The CTDPH does recommend, however, that the New LCR require customers, not the system, to pay for

any treatment to be used in the customer's own home. The New LCR should only require the system to notify the customer of the LSL and provide a list of point-of-use devices that are effective for lead removal.

If the EPA decides in the New LCR to require the system to provide the point-of-use device, then the CTDPH recommends that the New LCR require the customers to maintain and replace the device, not the system. In addition, if point-of use devices are require, the CTDPH recommends that the EPA provide a list of acceptable point-of use devices for lead removal. This will assist the systems, the states, and the public greatly.

Finally, if the New LCR requires systems to maintain or replace devices, states will require additional staff and funding to institute enforcement actions against systems that fail to maintain or replace a device. Therefore, the New LCR should require the customers to maintain and replace the device, not the system, to lessen the burden on states.

3. Should the New LCR change the requirements for designating optimal corrosion control treatment to either prescribe a default optimal corrosion control treatment that a system must maintain unless the system can demonstrate equivalent optimal corrosion control treatment to the state, or require the system to conduct a periodic re-evaluation of optimal corrosion control treatment that the state would be required to review?

Currently under the LCR, a system submits to the CTDPH an optimal corrosion control treatment proposal and, assuming the information provided in the proposal indicates that such treatment will work for the system, the CTDPH issues the system an approval to construct and install the treatment proposed. When the optimal corrosion control treatment proposed is not effective, however, the systems "point fingers" at CTDPH because the CTDPH approved it. What some systems do not understand is that every system's water chemistry is different and therefore a treatment proposal designed to work at one system may not work at another. Some systems also do not understand that for the treatment to be effective, the system needs to ensure the treatment's operational range is maintained. The CTDPH does not currently have staff with corrosion expertise and therefore relies on a system's treatment proposal. The CTDPH recommends against prescribing in the New LCR a default optimal corrosion control treatment for all systems without requiring each system to assess such treatment. Each system is different and, as such, not one type of optimal corrosion control treatment works for all systems. By requiring a default treatment, the CTDPH is concerned that public health would not be protected. Therefore, the CTDPH recommends that the New LCR require systems to demonstrate to the states that an optimal corrosion control treatment will work for their system and provide the evidence to support that it would work.

In addition, the CTDPH recommends that the New LCR require systems to periodically re-evaluate their optimal corrosion control treatment as the system may need to adjust operational ranges to achieve effective optimal corrosion control treatment. Specifically, the CTDPH recommends that the New LCR require systems, regardless of the population served, to conduct water quality parameter monitoring more frequently than the LCR currently requires, which is two samples per site every six months for systems that serve over 50,000 people. The CTDPH recommends that the New LCR require systems, regardless of size, that have optimal corrosion control treatment to conduct water quality monitoring at least quarterly. The CTDPH does not, however, recommend requiring states to review the results of the systems re-evaluation as that would require additional staff and funding to do so. Instead, the CTDPH recommends that the New LCR require a state's involvement only when the system makes changes to the optional corrosion control treatment or no longer meets the operational ranges for such system.

4. Should the New LCR require a system to find and fix problems in its corrosion control treatment if a tap sample exceeds an action level?

Requiring a system to find and fix problems in its corrosion control treatment when a tap sample exceeds an action level is similar to the federal Revised Total Coliform Rule. The CTDPH recommends that the New LCR require systems to find the problem if a tap sample exceeds an action level and fix it if the problem is with respect to the system's corrosion control treatment. It will, however, be impossible for systems to fix problems, or require a customer to fix a problem, when the problem is within the customer's control and on their property.

Under the current LCR, systems that serve less than 50,000 people are not required to monitor optimal corrosion control treatment ranges and tap water quality parameters and therefore will not know whether or not their corrosion control treatment is working as designed. The CTDPH recommends that the New LCR requires systems to find and fix problems in its corrosion control treatment if a tap sample exceeds an action level as this will hopefully make these systems voluntarily monitor optimal corrosion control treatment ranges and tap water quality parameters throughout the distribution system and re-evaluate the optimal corrosion control treatment ranges to ensure such treatment is effective.

C. Transparency & Public Education

1. What do states think are the most effective ways for systems to deliver educational information to customers?

The CTDPH thinks that the educational materials delivered to consumers should be written in a language that is easy for the general public to understand, translated into the appropriate languages and terms based on the populations served, where possible, and provided in different formats, such as brochures and handouts with info-graphs and bullets for ease in reading.

For community systems, the CTDPH recommends that the New LCR require that such systems mail the education information to the system's residential customers promptly, to post it in common areas for non-residential premises served by the system, and post it on the system's website.

For schools, daycares, and offices served by non-community systems, the CTDPH recommends that the New LCR require the systems to send to each person that uses the water at such schools, daycares, and offices an email with links to the educational information and resources and copy the state on such emails. By copying the state on these emails, the state will know the exact moment that the system provided notice rather than requiring the state to wait for the paperwork from the system regarding the notice provided. If the system does not know if it has an email for the parent or guardian of each child that attends the school or daycare, the New LCR should require that the system also send home a hardcopy of the educational information and resources with each child.

2. What opportunities and challenges would states face if the LCR was revised to require that water systems provide on-going targeted outreach with a special emphasis on all customers with LSLs?

The CTDPH recommends that the New LCR require on-going targeted outreach with a special emphasis on all customers with LSLs as many residents may not know that they have a LSL or the implications to them if they do. The CTDPH recommends, however, that the

EPA prepare the targeted outreach materials for the states to provide to the systems they regulate for consistency in the LSL messaging.

3. What opportunities and challenges would states face if the LCR was revised to require that systems to provide notification to consumers within 24 hours of exceeding an action level (as required by the 2016 WIIN Act)?

The CTDPH is currently requiring systems to provide notification to consumers within 24 hours of exceeding an action level as required by the 2016 WIIN Act and finds it to be very challenging and time consuming. Requiring systems with an action level exceedance to provide notification to consumers within 24 hours can take CTDPH staff from two hours to more than half a day per system. The tasks CTDPH staff perform include, but is not limited to, calling a system and explaining to them the WIIN Act requirement and tracking such system for compliance. In addition, most systems do not even realize they have an exceedance until the CTDPH notifies them. Therefore, the CTDPH does, and will, face many challenges if the New LCR requires systems to provide notification to consumers within 24 hours of exceeding an action level.

4. What opportunities and challenges would states face if the LCR was revised to require that water systems make information accessible to consumers on the results of all tap sampling, results of water quality parameter monitoring and the number and locations of LSLs?

The CTDPH recommends that the New LCR require that systems make information accessible to consumers on the results of all tap sampling, results of water quality parameter monitoring and the number and locations of LSLs. The CTDPH recommends this especially for systems over a certain size as these larger systems typically have a website on which to post this information, which makes verification by the state of a system's compliance easy. If, however, the EPA decides that this requirement should apply to all systems, the CTDPH recommends that the New LCR require that a system state in its annual consumer confidence report, rather than on a website, that the results of all tap sampling and water quality parameter monitoring is available upon request. With respect to customers with LSLs, the CTDPH recommends that the New LCR require that systems notify those customers directly.

Please note that in 2016, the CTDPH requested that systems serving more than 50,000 people make all tap sampling results available on their websites. Some large systems expressed difficulty in doing this. In addition, all systems were unwilling to provide the locations of the results due to privacy concerns. Therefore, if the New LCR requires that systems make this information accessible to consumers on the results of all tap sampling, results of water quality parameter monitoring and the number and locations of LSLs, the CTDPH recommends that the specific locations of such information not be required to be provided.

D. Tap Sampling

1. What are the opportunities and challenges for states if the rule changed sampling protocols, including changing where systems are required to collect tap samples to at sites based on a customer request and at schools served by the system?

The CTDPH agrees that systems should be required to sample based on real exposure by requiring systems to collect the requisite number of samples from willing residential customers to meet the minimum required number of samples and at all schools.

- 2. What are the opportunities and challenges for states if the rule changed the way samples are collected to be more representative of exposure by increasing the number of samples required?**

The CTDPH agrees that more samples should be required to represent the location of exposure. Water in the distribution system may be from different entry points and sources with different treatments, and that is not uniformly distributed throughout the system. Therefore, the CTDPH recommends that the New LCR require that a system collect the minimum number of samples at each distribution zone from different sources to capture the corrosion impact throughout the distribution system.

- 3. What are the opportunities and challenges for states if the rule changed the way samples are collected to be more representative of exposure by instructing consumers to sample when they are drawing water for drinking or cooking?**

The CTDPH recommends that the New LCR change the way samples are collected by requiring that samples be collected at locations which are more representative of where and when consumers are exposed. This method also will encourage more consumer participation in sampling since the water usage restrictions on first draw samples will not apply. The CTDPH recommends, however, that the EPA provide to consumers clear instructions, which should be provided in a number of languages, on sampling, training opportunities and support. The CTDPH also recommends that the New LCR require that the consumers who collect the samples provide to the systems with the samples a signed certification stating that such instructions were understood and followed to ensure the consumer properly collected the sample. The CTDPH sees as a challenge the willingness of the systems to pick up the responsibilities resulting from sampling errors.

- 4. What are the opportunities and challenges for states if the rule established a household action level that if exceeded would trigger a report to the consumer and to the applicable health agency for follow up?**

The CTDPH agrees that systems should promptly notify and reach out to consumers that have lead results over a health based standard. Depending on what the EPA sets the household action level that triggers a report and follow up, this requirement may place an additional and different degree of workload on staff, which will be a challenge for a state that is already dealing with limited staff and funding issues.

E. Copper Revision

- 1. What opportunities and challenges would states face if the EPA revised the LCR to establish a screen to determine if systems have water aggressive to copper and, if the water is aggressive, to require monitoring and/or public education and/or corrosion control treatment?**

The CTDPH recommends that the EPA in the New LCR to establish a screen to determine if systems have water aggressive to copper and, if the water is aggressive, to require monitoring and/or public education and/or corrosion control treatment. The CTDPH questions, however, how reliable the screening will be and what indices will be used. The CTDPH has established a screening of all new sources for corrosivity potential and requires corrosion control treatment, if necessary. However, this process only looks at the water quality parameters and is not inclusive of different corrosion factors. How will systems and states determine if a system's water is aggressive to copper? What parameters are needed for the determination? Determining whether an existing system's water is aggressive to copper without any prior copper exceedances requires staff with extensive corrosion knowledge.

While the CTDPH recommends that the EPA in the New LCR to require increased monitoring and corrosion control treatment, if necessary, the CTDPH recommends that the EPA reserve the requirement to provide public education for when the system actually exceeds the action level.

2. What opportunities and challenges would states face if the EPA revised the LCR by modifying tap sampling to require separate sampling sites for copper?

The CTDPH agrees that copper requirements and sampling should be separated from the lead requirements as the majority of copper exceedances are found within newer copper piping instead of aged pipes, which is opposite of where the majority of elevated lead is detected.

III. DISCUSSION

A. Do you have any other approaches that you would like EPA to consider?

The EPA's potential revisions to the LCR are concentrated on community water systems and LSLs. They do not address schools and daycares that are classified as a public water system. They also do not address systems with lead solder and other material with lead contents in their distribution systems. The CTDPH recommends that the EPA consider the following:

1. Require systems with optimal corrosion control treatment to prepare a water management plan that would:
 - a. Address CCT effectiveness for schools, especially after the summer vacation; and
 - b. Address extended water stagnation after school vacations and weekends.
2. Increase technical assistance to schools and daycares as these serve the most vulnerable populations.
3. Provide instruction regarding the proper technique for collecting first draw samples for systems with a single building.
4. Finalize and publish the draft 2016 3Ts Guidance Document as this version provides information regarding the proper investigatory sampling techniques and strategies for schools and daycares.
5. That EPA work with other federal agencies, such as HUD and the Department of Education, on funding full LSL replacement, replacement of internal plumbing with lead solder, and installation of optimal corrosion control treatment.

B. Any additional information or concerns that the CTDPH would like to share with EPA?

Currently, the CTDPH is implementing the WINN Act, which requires a large amount of time for the implementation. The CTDPH has also encountered challenges with respect to enforcement of the WINN Act requirements. The CTDPH recommends that the EPA provide to states, systems and customers clearer instructions regarding the responsibilities of each under the WINN Act when there is an "exceedance of lead levels at households". The CTDPH also recommends that the EPA provide to state and local governments additional resources and tools to track compliance with the WINN Act public notification and "exceedance of lead levels at households" requirements to assist in enforcement and compliance.

In addition, the CTDPH finds that the Enforcement Tracking Tool (ETT) list has become extremely more difficult for the CTDPH to manage since the point rate of interest has been dropped to 11 ETT points. As a result of the change in standard, the number of systems in Connecticut on such list has doubled. In addition, as a result of the change in standard, the focus on assisting systems on the ETT list return to compliance has decreased due to limited staff available to provide such assistance. The CTDPH recommends that the EPA make some tweaks to the ETT list, including modifying the existing spreadsheet to include drop downs for states and local governments to classify the current status (i.e. the system may be quoted “not on path”, but could be in compliance) and providing more pre-made tools.

C. EPA would appreciate any information, and specific data, state and local governments could provide on their experiences with LSL replacement, corrosion control treatment (studies and implementation), sampling programs or other aspects of drinking water lead control programs.

The CTDPH would like to share with the EPA its experiences assisting several systems to return to compliance that had corrosion control treatment in place and exceeded the lead action level with corrosion control treatment. These experiences show the complexity of corrosion control and the importance of proper sampling. They also show the need for extensive training on corrosion control and proper residual for water systems and state and local government. Finally, these experiences show that the New LCR should address lead solder joints, especially in school and daycare facilities.

Case 1: Dislodge of Lead Solder, corrosion control treatment in place

An elementary school, which was constructed prior to 1986 and has lead solder joints, is served by its own water system. In 2002, the school installed two parallel calcite filters for corrosion control and has since been operating with a target pH of 7.6. The school recently exceeded the lead action level during the monitoring period of 1/1/2017 – 12/31/2017 when one single location, Room 12, returned with a result of 0.538 mg/L. Room 12 is located at the dead end of one of the school wings. The other four results were either non-detect or well below the action level. Lead was not detected at the source water.

Follow up actions by the certified operator after learning of the exceedance found a slug of lead solder in the shut off valve for the faucet and particulates in the aerator in Room 12. The faucet, shut off valve, and the entire section of pipe from the main line to the faucet were replaced.

A follow up sample from Room 12 returned with a lead result at 0.004 mg/L. All potable water taps within the school were sampled to verify that no other locations within the school had a similar issue. Four locations, which are all dead ends of the water line, returned above the action level. Investigation revealed particulates in the shut off valves and the aerators at those four locations. The faucet, shut off valve, and service pipe in those four locations were then replaced. Follow up samples from those four locations returned with results well below the action level. The school also removed two of the water fountains from service that returned with elevated results.

The CTDPH accepted the school’s proposal to continue using the existing calcite filters to achieve optimal corrosion control treatment. The target pH remains at 7.6 within the operational range of 7.3 to 7.9. For this school, the CTDPH requires the system to monitor pH weekly at the entry point and to take two samples every 6 month at the end of the distribution system. The CTDPH also recommended that the system monitor water quality parameters once every quarter and in multiple locations to ensure that the treated water gets to all ends of the system. In addition, the CTDPH advised the system to sample for lead and copper following the system’s hydraulic flow pattern to ensure it is taking first draw samples, to sample with the school in

session for at least a day (i.e., not immediately after weekends or holidays) to prevent water with extended stagnation time (past 24 hours).

Case 2: Treatment stability and proper residual maintenance

An elementary school with its own water system exceeded the lead action level in the 1/1/2014 to 12/31/2016 monitoring period and installed orthophosphate for corrosion inhibition. The school had existing parallel calcite filters to raise the pH and an aeration system to remove radon prior to the addition of orthophosphate. The pH at the entry point is between the ranges of 7.2 to 7.9. MCT 5071, a liquid zinc orthophosphate containing 75 percent phosphoric acid that is ANSI/NSF Standard 60 certified, is injected before the atmospheric tank and after the calcite filters and aeration system with a target orthophosphate as phosphate residual of 3.0 mg/L at the entry point and end of distribution system once stabilized.

The orthophosphate treatment was activated at the end of April 2017 with orthophosphate as phosphate residual slowly increasing at the entry point from 0.12 mg/L on 5/1/17 to 2.79 mg/L on 6/19/17. Results for 20 compliance lead and copper samples collected on 6/16/2017 were either non-detect or well below the action level. The school was then closed for summer vacation.

Prior to the start of school in August 2017, the school flushed its system flushing. The orthophosphate as phosphate residual at the entry point was at 3.56 mg/L on 8/7/17 and 5.56 mg/L on 8/21/17, and then dropped down to 4.85 mg/l on 9/29/17. 20 compliance samples collected on 9/18/17 and 9/19/17 returned with seven of the samples over the lead action level.

The CTDPH determined that the following may be possible causes for the elevated lead results:

1. The phosphate coating may have been washed out during the flushing after the 2017 summer vacation. The coating was not sufficiently developed and stabilized for the very short time the treatment was on before summer vacation. There was not much water use during the summer as there was no summer school to continue to build the coating.
2. The lower orthophosphate as phosphate residual (in mid 1's mg/L) in May and June after treatment activation in April was probably more effective than the higher residual. (Mike Schock's January 2018 Presentation talked about the need to have a proper residual for effective corrosion inhibition. Too much can cause lead phosphate. Too little may not be enough.)
3. The high orthophosphate as phosphate residual in August and September (in 5's mg/L) may have exacerbated the lead level.
4. The dissolved oxygen from the aeration treatment (for radon removal and pH adjustment) may play a role in the effectiveness of the orthophosphate.
5. Proper pH in the distribution system to facilitate proper corrosion inhibition.

The CTDPH recommended the following to help the system return to compliance and maintain effective corrosion control treatment:

1. Do not sample for lead and copper after weekends or vacations because of the extended stagnation time.
2. Develop a procedure to run the treated water on a daily basis when school is in session into all potable plumbing so that the treatment can do its job to coat the pipes.

3. Develop a procedure to run treated water into the school during the summer vacation at least once a week to facilitate phosphate coating.
4. Develop a program to run treated water into every tap in the school after summer vacation, but prior to the start of school.
5. Since the treatment has maintained an orthophosphate residual within the 3's for the past 3 months, re-sample from the seven locations (in sequence starting from location closest to the entry point) for first draw samples and then again for one minute flushed samples to verify results and treatment effectiveness.
6. Contact the orthophosphate manufacturer to confirm the proper orthophosphate as phosphate residual and pH to use for optimum corrosion control treatment effectiveness based on the system's treatment methods and water chemistry.
7. Collect samples for dissolved oxygen from raw water, at the entry point, and in the distribution system, and assess for corrosion impact.

IV. CONCLUSION

The CTDPH appreciates the opportunity to provide comments on the changes the EPA is proposing to include in the New LCR. While the CTDPH supports many of the changes that the EPA is proposing, it is concerned that such changes will require both an increase in staff time and in staffing levels needed to implement and enforce these proposed changes. In addition, to implement and enforce these proposed changes, the CTDPH staff, as well as the staff in many of the states, will require extensive training, technical assistance and resources from the EPA to do so.