rec'd 6-20-16

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

June 3, 2016

Re: Requirements and Recommendations for Community Water Systems (Population ≤ 50,000) Under the Lead and Copper Rule

Dear Public Water Supplier:

This letter is intended to remind you of your responsibilities under the Lead and Copper Rule (LCR) and to provide some recommendations for improving public health protection and consumer confidence. The purpose of the LCR is to protect public health by minimizing lead and copper levels in drinking water, primarily by making water less corrosive. The LCR establishes an action level of 0.015 mg/L for lead and 1.3 mg/L for copper. An action level exceedance is not a violation but can trigger other requirements that include water quality parameter monitoring, corrosion control treatment, source water monitoring/treatment, public education, and lead service line replacement.

The following requirements and recommendations fall into three categories: sample site selection, monitoring and reporting, and optimized corrosion control treatment.

Sample Site Selection:

As per §109.1103(g), all systems monitoring under the LCR are required to develop a sample site location plan that includes the following elements:

- A materials evaluation of the distribution system
- Lead and copper tap sample site locations
- Water quality parameter sample site locations
- Certification that proper sampling procedures are used

As part of the materials evaluation, water suppliers are required to review several sources of information (including plumbing codes, permits, and records in the files of each municipality) in order to identify a sufficient number of lead and copper tap sampling sites. The materials evaluation shall be updated, as necessary, to ensure a sufficient number of sampling sites.

Water suppliers are required to select all Tier 1 sample sites for both initial and reduced monitoring. Tier 1 sample sites consist of single family structures that have one or more of the following:

- Copper pipes with lead solder installed after 1982
- Lead pipes
- Lead service lines

If lead service lines exist, at least 50 percent of the sample sites shall be sites with lead service lines.

The use of Tier 2 or Tier 3 sites must be properly documented along with a justification of why a sufficient number of Tier 1 sites are not available. An acceptable justification would be that Tier 1

sites do not exist, or that homeowners at Tier 1 sites refused to participate in the monitoring program. An incomplete materials evaluation is not an acceptable justification.

If Tier 2 or Tier 3 sample sites must be used, the sites shall consist of the following:

- Tier 2 sites shall consist of buildings, including multi-family residences, that have one or more of the following:
    - Copper pipes with lead solder installed after 1982
    - Lead pipes
    - Lead service lines
- Tier 3 sites shall consist of single family structures that contain copper pipes with lead solder installed before 1983

If additional compliance samples are collected above the minimum required number of samples, the samples should be from the highest risk sample sites in order to avoid diluting the sampling pool.

As per §109.1107(a)(1), the sample site location plan must be submitted to the Department of Environmental Protection (DEP) prior to initial monitoring or upon request. DEP notified all water suppliers in 2004 to submit any remaining sample site location plans. Additionally, water suppliers are responsible for updating the plan within the first 10 days following the end of each applicable monitoring period as follows:

- Identify lead and copper tap sample sites that are different from sites sampled during previous monitoring periods
- Identify any changes to water quality parameter sample sites from sites sampled during previous monitoring periods
- Update the sample procedure certification

In addition to the above-mentioned requirements, both DEP and the U.S. Environmental Protection Agency (EPA) strongly recommend that water suppliers increase transparency by posting on their public website the sample site location plan and materials evaluation (including the locations of lead service lines), together with any updated inventory or map of lead service lines and lead plumbing in the system. These plans should be posted for the 2016 - 2018 monitoring cycle. If a public website is not available, the sample site location plan and materials evaluation should be made available to the public upon request. Homeowner names and exact addresses may be redacted for privacy purposes.

Monitoring and Reporting:

As per §109.1103(h), the LCR specifies lead and copper tap sample collection procedures that include the following:

- Each sample must be a first-draw sample that is 1 liter in volume and has stood motionless in the plumbing system of each sampling site for at least 6 hours.

- Samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be collected at an interior tap from which water is typically drawn for drinking.
- First-draw samples may be collected by the water supplier or by residents (if the residents are properly instructed of the sampling procedures).
- The water supplier must make every reasonable effort to collect tap samples from the same sampling sites that were used for initial monitoring. If an original sampling site is not available, a tap sample may be collected from another sampling site in the sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity to the original site.

EPA recently posted new guidance on lead and copper tap sample collection procedures. A copy of this guidance, *Clarification of Recommended Tap Sampling Procedures for Purposes of the Lead and Copper Rule* is enclosed for your reference and includes the following:

- Water suppliers should **NOT** recommend the removal or cleaning of aerators prior to or during the collection of lead and copper tap samples because this practice could mask the added contribution of lead at the tap.
- Water suppliers should **NOT** include a pre-stagnation flushing step in the sampling instructions for homeowners because pre-stagnation flushing may potentially lower the lead levels as compared to when it is not practiced.
- Lead and copper tap samples should be collected using wide-mouth bottles because wide-mouth bottles allow for a higher flow rate during sample collection -- which is more representative of the flow that a consumer may use to fill up a glass of water.

DEP concurs with this guidance and strongly recommends that you update your sample collection procedures for the 2016 - 2018 monitoring cycle.

As a result of recent events and national media coverage, many water systems have been conducting additional first-draw lead and copper testing or are responding to customer requests for additional sampling. ***Please note that these sample results must be reported to DEP***. Some of the results may also be included in the 90th percentile compliance value calculation. If a sample is collected from a site that meets the sample site location and sample collection criteria during an LCR compliance monitoring period, the results would be included in the 90th percentile compliance value calculation and should be reported as sample type 'D.' Any other first-draw sample result that does not meet the required criteria should be reported as sample type 'S' – these are NOT included in any 90th percentile compliance value calculation. A copy of EPA's 2004 memo on *Clarification of Requirements for Colleting Samples and Calculating Compliance* is also enclosed for your reference.

Finally, both DEP and EPA strongly recommend that you enhance your efforts to ensure that residents promptly receive lead sampling results from their homes, together with clear information on lead risks and how to abate them, and that the general public receives prompt information on high lead levels in your drinking water system.

Optimized Corrosion Control Treatment:

As per §109.1102(b), all water systems are required to optimize corrosion control treatment (OCCT), and maintain OCCT at all times to ensure public health protection. This includes before, during, and after making a modification or change in source water or treatment.

Any changes in source water or treatment must be approved by DEP via a permit or permit amendment prior to making the change. As per §109.602(a), PWS Permit Module 1 – Completeness Report (3900-PM-BSDW0254b) and the Instructions for PWS Permit Application (3900-PM-BSDW0254a), the application must include an assessment of simultaneous compliance with the LCR and other rules. Evaluating simultaneous compliance may involve a system-wide assessment prior to changing sources or treatment facilities. You may also be required to conduct additional lead and copper tap or other compliance monitoring to assess baseline and post-change water quality.

Changes in source water include the addition or removal of sources or interconnections. It may include changes in flow or blending ratios if these changes have the potential to affect water quality parameters or OCCT. Finally, it may also include the use of permitted but unused sources that may not have been included in any previous LCR monitoring or evaluation of OCCT. It is imperative that any changes in sources and/or treatment are fully assessed and approved by DEP prior to making the change.

In closing, the LCR was first promulgated in 1989 and has undergone several revisions since then. The rule is arguably one of the most complex rules and is often difficult to understand. However, lead in drinking water is a serious health concern and we trust that you share our commitment to protecting public health. If you have any questions regarding your responsibilities under the LCR or the requirements and recommendations included in this letter, please feel free to contact your local DEP district office.

Sincerely,

Lisa Daniels
Director
Bureau of Safe Drinking Water

Enclosures

cc: DEP District Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 2 9 2016

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Clarification of Recommended Tap Sampling Procedures for Purposes of the Lead and Copper Rule

FROM: Peter C. Grevatt, Director
Office of Ground Water & Drinking Water

TO: Water Division Directors
Regions I - X

The Lead and Copper Rule, 40 C.F.R. Sections 141.80 to 141.91, requires monitoring at consumer taps to identify levels of lead in drinking water that may result from corrosion of lead-bearing components in a public water system's distribution system or in household plumbing. These samples help assess the need for, or the effectiveness of, corrosion control treatment. The purpose of this memorandum is to provide recommendations on how public water systems should address the removal and cleaning of aerators, pre-stagnation flushing, and bottle configuration for the purpose of Lead and Copper Rule sampling.

Removal and Cleaning of Aerators

EPA issued a memorandum on *Management of Aerators during Collection of Tap Samples to Comply with the Lead and Copper Rule* on October 20, 2006. This memorandum stated that EPA recommends that homeowners regularly clean their aerators to remove particulate matter as a general practice, but states that public water systems should not recommend the removal or cleaning of aerators prior to or during the collection of tap samples gathered for purposes of the Lead and Copper Rule. EPA continues to recommend this approach. The removal or cleaning of aerators during collection of tap samples could mask the added contribution of lead at the tap, which may potentially lead to the public water system not taking additional actions needed to reduce exposure to lead in drinking water. EPA's recommendation about the removal and cleaning of aerators during sample collection applies only to monitoring for lead and copper conducted pursuant to 40 C.F.R. 141.86.

Pre-Stagnation Flushing

EPA is aware that some sampling instructions provided to residents include recommendations to flush the tap for a specified period of time prior to starting the minimum 6-hour stagnation time required for samples collected under the Lead and Copper Rule. This practice is called pre-stagnation flushing. Pre-stagnation flushing may potentially lower the lead levels as compared to when it is not practiced.

Flushing removes water that may have been in contact with the lead service line for extended periods, which is when lead typically leaches into drinking water. Therefore, EPA recommends that sampling instructions not contain a pre-stagnation flushing step.

Bottle Configuration

EPA recommends that wide-mouth bottles be used to collect Lead and Copper compliance samples. It has become apparent that wide-mouth bottles offer advantages over narrow-necked bottles because wide-mouth bottles allow for a higher flow rate during sample collection which is more representative of the flow that a consumer may use to fill up a glass of water. In addition, a higher flow rate can result in greater release of particulate and colloidal lead and therefore is more conservative in terms of identifying lead concentrations.

Conclusion

EPA is providing these recommendations for collection of Lead and Copper Rule tap samples to better reflect the state of knowledge about the fate and transport of lead in distribution systems. The three areas discussed above may potentially lead to samples that erroneously reflect lower levels of lead concentrations. The recommendations in this memorandum are also consistent with the recommendations provided by the EPA's Flint Task Force. For more information about the Task Force please view EPA's website at: http://www.epa.gov/flint.

To provide further information on this topic, EPA included an amended "Suggested Directions for Homeowner Tap Sample Collection Procedures" in Appendix D of the 2010 revision of *Lead and Copper Rule Monitoring and Reporting Guidance for Public Water Systems* (EPA 816-R-10-004). This document can be found at:
http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100DP2P.txt

Please share these recommendations with your state drinking water program directors. If you have any questions, please contact Anita Thompkins at thompkins.anita@epa.gov.

Attachment

cc: James Taft, Association of State Drinking Water Administrators

Suggested Directions for Homeowner Tap Sample Collection Procedures

Revised Version: February 2016

These samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency and your State under the Lead and Copper Rule, and is being accomplished through a collaboration between the public water system and their consumers (e.g. residents).

Collect samples from a tap that has not been used for at least 6 hours. To ensure the water has not been used for at least 6 hours, the best time to collect samples is either early in the morning or in the evening upon returning from work. Be sure to use a kitchen or bathroom cold water tap that has been used for drinking water consumption in the past few weeks. The collection procedure is described below.

1. Prior arrangements will be made with you, the customer, to coordinate the sample collection. Dates will be set for sample kit delivery and pick-up by water system staff.
2. There must be a minimum of 6 hours during which there is no water used from the tap where the sample will be collected and any taps adjacent or close to that tap. Either early mornings or evenings upon returning home are the best sampling times to ensure that the necessary stagnant water conditions exist. Do not intentionally flush the water line before the start of the 6 hour period.
3. Use a kitchen or bathroom cold-water faucet for sampling. If you have water softeners on your kitchen taps, collect your sample from the bathroom tap that is not attached to a water softener, or a point of use filter, if possible. Do not remove the aerator prior to sampling. Place the opened sample bottle below the faucet and open the cold water tap as you would do to fill a glass of water. Fill the sample bottle to the line marked "1000-mL" and turn off the water.
4. Tightly cap the sample bottle and place in the sample kit provided. Please review the sample kit label at this time to ensure that all information contained on the label is correct.
5. If any plumbing repairs or replacement has been done in the home since the previous sampling event, note this information on the label as provided. Also if your sample was collected from a tap with a water softener, note this as well.
6. Place the sample kit in the same location the kit was delivered to so that water system staff may pick up the sample kit.
7. Results from this monitoring effort and information about lead will be provided to you as soon as practical but no later than 30 days after the system learns of the tap monitoring results. However, if excessive lead and/or copper levels are found, immediate notification will be provided (usually 1-2 working days after the system learns of the tap monitoring results).

Call_____at_____if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT

Water was last used: Time_____ Date_____
Sample was collected: Time_____ Date_____

Sample Location & faucet (e.g. Bathroom sink): _____

I have read the above directions and have taken a tap sample in accordance with these directions.

Signature_____ Date_____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 23 2004

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Lead and Copper Rule - Clarification of Requirements for Collecting Samples and Calculating Compliance

FROM: Benjamin H. Grumbles
Acting Assistant Administrator

TO: Regional Administrators
Water Division Directors
Regions I-X

This memo reiterates and clarifies elements of the Lead and Copper Rule (LCR) associated with the collection and management of lead and copper samples and the calculation of the lead 90th percentile for compliance. Over the past several months, Headquarters has been conducting a national review of implementation of the LCR. This review consists of both data analysis and feedback from expert panels on aspects of the rule. Headquarters is continuing its review, and will be making a determination in early 2005 on specific areas of the rule that may require changes in regulation or need clarification through guidance or training.

One area identified for additional guidance is the management of lead and copper samples and the calculation of the lead 90th percentile. Because the need for additional guidance was identified in both Headquarters' data review and the expert panels, Headquarters is addressing this area prior to the final determination on rule and guidance changes. This guidance reflects the requirements of the LCR as it is currently written. These issues may be revisited if EPA makes a determination that changes should be made to the LCR.

1) What samples are used to calculate the 90th percentile?

We have received several questions regarding what tap samples should be used to calculate the 90th percentile for lead, specifically, where utilities collect samples beyond the minimum number required by the regulations. EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool. All sample results from a system's sampling pool during the monitoring period must be included

in the 90th percentile calculation, even if this includes more samples than the required minimum number needed for compliance. [40 CFR 141.86(e)] For example, consider a situation where a system sends out sample kits to 150 households to ensure that it will have a sufficient number of samples to meet its required 100 samples for compliance. If the system receives sample results from 140 households, it would use the results of the 140 samples in calculating the 90th percentile.

In some cases, a utility may choose to take a confirmation sample to verify a high or low concentration. It is entirely possible for the concentration of a confirmation sample to be significantly higher or lower than the concentration of the original sample. However, where confirmation samples are taken, the results of the original and confirmation sample must be used in calculating the 90th percentile. The LCR does not allow substitution of results with "confirmation" samples, nor does it allow the averaging of initial and confirmation samples as a single sampling result. While we support re-sampling at a home with high lead levels, all sample results from the sampling pool collected within the monitoring period must be included in the calculation.

Inclusion of samples in 90th Percentile Calculations

40 CFR 141.86(e) "The results of any additional monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the state in making any determinations (i.e.; calculating the 90th percentile lead or copper level) under this subpart."

40 CFR 141.80(c)(3)(i) "The results of all lead and copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. ..." [emphasis added]

2) What should utilities do with sample results from customer-requested sampling programs?

EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool. [40 CFR 141.80(c)(1)] ("Samples collected at sites not meeting the targeting criteria may not be used in calculating the 90th percentile lead and copper levels." 56 Fed Reg. 26518 (June 7, 1991)). Maintaining a consistent set of compliance sample sites provides the system with a baseline against which to measure the 90th percentile over time. If a system designates sites which were not sampled during previous monitoring periods, it must notify the state and include an explanation of why the sampling sites have changed. [40 CFR 141.90(a)(1)(v) and 141.90(h)(2)]

In addition to compliance sampling, many water systems have additional programs to test for lead in drinking water at the request of homeowners. Customer-requested samples that are not collected as part of the system's regular compliance sampling pool may or may not meet the sample site selection criteria, and the system may not have sufficient information to determine whether they do or not. Including results from samples that do not meet the criteria could

inappropriately reduce the 90th percentile value. Therefore, samples collected under these programs should not be used to calculate the 90th percentile, except in cases where the system is reasonably able to determine that the site selection criteria for compliance sampling are satisfied.

However, even though these customer-requested samples are not used for the 90th percentile calculation, the sample results must still be provided to the state. [40 CFR 141.90(g)] If a significant number of customer-requested samples are above the lead action level, the state should re-evaluate the corrosion control used by the system and the composition of the compliance sampling pool. Further, where any results are above the action level, we strongly urge systems to follow up with the affected customers to provide them with information on ways to reduce their risk of exposure to elevated lead levels in drinking water.

3) What should states do with samples taken outside of the sampling compliance period?

The regulations require that systems on reduced monitoring collect samples during the period between June and September, unless the state has approved an alternate period. [40 CFR 141.86(d)(4)(iv)] Only those samples collected during the compliance monitoring period may be included in the 90th percentile calculation. [40 CFR 141.80(c)(3)]

An exception to this is where a state invalidates a sample and the system must collect a replacement sample in order to have a sufficient number with which to calculate compliance. The system must collect its replacement sample within 20 days of the invalidation. Even if the date of collection occurs after the closure of the monitoring period (but within 20 days of the invalidation), the results must be included in the 90th percentile calculation. [40 CFR 141.86(f)(4)]

Although samples collected outside the sampling compliance period should not be used in the compliance calculation, they must still be provided to the state [40 CFR 141.90(g)], as is the case with customer-requested samples.

4) What should states do to calculate compliance if the minimum number of samples are not collected?

As noted in guidance released earlier this year[1], states must calculate the 90th percentile even if the minimum number of samples are not collected. The LCR states that the 90th percentile level is calculated based on "all samples taken during a monitoring period" and does not require that the minimum required number of samples must be collected in order to calculate the 90th percentile level. [40 CFR 141.80(c)]

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[1] See March 9, 2004 memorandum from Cynthia Dougherty to Jane Downing at http://www.epa.gov/safewater/lcrmr/pdfs/memo_lcmr_lead_compliance_calculation.pdf

A system which fails to collect the minimum required number of samples incurs a monitoring and reporting violation and is thus required to conduct Tier 3 Public Notification (PN) [40 CFR 141.204(a)] and report the violation in its Consumer Confidence Report (CCR) [40 CFR 141.153(f)(1)]. The system will return to compliance for the monitoring and reporting violation when it completes these tasks and has completed appropriate monitoring and reporting for two consecutive 6-month monitoring periods (or one round of monitoring for a system on reduced monitoring). [*State Implementation Guidance for the LCRMR*, EPA-816-R-01-021]

Calculating the 90th Percentile

40 CFR §141.80(c)(3) – "The 90th percentile lead and copper levels shall be computed as follows:
(i) The results of all lead and copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.
(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.
(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(3)(ii) is the 90th percentile contaminant level.
(iv) For water systems serving less than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

5) What is a proper sample?

We have received numerous requests to clarify the LCR with respect to proper samples and grounds for invalidation.

The LCR was designed to ensure that samples are collected from locations which have the highest risk of elevated lead concentrations. The rule established a tiering system (Attachment A) that would guide utilities in selecting locations for tap sampling that are considered high risk and requires that the sampling pool be comprised of Tier 1 sites, if they are available. [40 CFR 141.86(a)]

The LCR also defines a proper sample as a first draw sample, 1 liter in volume, that is taken after water has been standing in plumbing for at least six hours, and from an interior tap typically used for consumption – cold water kitchen or bathroom sink tap in residences. [40 CFR 141.86(b)(2)] There is no outer limit on standing time.

To ensure that sampling is conducted properly, the LCR requires that samples be collected by the system or by residents if they have been properly instructed by the water system. As added insurance that the system gives proper instructions, the rule does not allow water systems to challenge sample results based on alleged homeowner errors in sample collection. [40 CFR 141.86(b)(2)]

6) How can utilities avoid problems with sample collection?

In order to avoid any problems with sample collection, the utility may wish to do the sampling itself or review the sample collection information before sending it to the lab. If the utility chooses to use residents to perform the sampling, it should provide clear instructions and a thorough chain-of-custody form for residents to fill out when the sample is taken. This will allow the laboratory or utility to eliminate improperly collected samples prior to the actual analysis. For example, if a sample bottle is only half full, then it should not be analyzed by the laboratory. Likewise, if the documentation accompanying the sample indicates that it was taken from an outside tap, the sample should not be analyzed. Systems may need to make arrangements to collect replacement samples for samples that are not analyzed by the laboratory.

Once a sample is analyzed, the results may not be challenged by the water system. As explained by Question #1 of this memorandum, the results for all samples from the compliance sampling pool must be included in the 90th percentile calculation unless there are grounds for invalidation. Improper sampling by residents is not a grounds for invalidation under 40 CFR 141.86(f).

7) On what grounds may a sample be invalidated?

The regulations allow the state to invalidate a lead or copper tap sample only if it can document that at least one of the following conditions has occurred:

1. The laboratory establishes that improper sample analysis caused erroneous results;
2. The state determines that the sample was taken from a site that did not meet the site selection criteria of this section;
3. The sample container was damaged in transit; or
4. There is substantial reason to believe that the sample was subject to tampering. [40 CFR 141.86(f)(1)]

We interpret the second condition to mean a site that is not part of the compliance sampling pool, that has not been identified as a Tier 1 or other high risk site, or that has been altered in such a way that it no longer meets the criteria of a high-risk site (e.g., new plumbing or the addition of a water softener).

It is important to note that states may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample. [40 CFR 141.86(f)(3)] The system must report the results of all the samples to the state, and provide supporting documentation for all samples it believes should be invalidated. [40 CFR 141.86(f)(2)] The state must provide its formal decision on whether or not to invalidate the sample(s) in writing. If a state makes a determination to invalidate the sample, the decision and the rationale for the decision must be provided in writing. [40 CFR 141.86(f)(3)]

In conducting the national implementation review, we have noticed that some utilities

may have requested invalidation of samples because they believe that there was improper sampling on the part of the homeowner (e.g., drawing water from the incorrect tap). This is a concern because there may be a tendency to only consider sampling errors when there are high results, even though there could be sampling errors that would lead to artificially low results (e.g., collecting a sample after the line was flushed). In any event, EPA takes a strict interpretation of the invalidation requirements in the LCR. If a system allows residents to perform sampling as part of the targeted sampling pool, the system may not challenge the accuracy of sampling results because it believes there were errors in sample collection. [40 CFR 141.86(b)(2)] The state may only invalidate samples based on the criteria described above.

In sum, if a water system (1) sends a sample bottle to a home within its compliance sampling pool, (2) receives the sample back from the homeowner, (3) sends the sample to the laboratory for analysis, and (4) receives results from the analysis back from the lab; that result must be used in calculating the 90th percentile. The only exception to this is if the state invalidates the result in accordance with the regulation.

Conclusion

The Agency is continuing its wide-ranging review of implementation of the LCR and will use the information to determine what changes should be made to existing guidance, training and/or the regulatory requirements. This memo should help to provide clarification on issues related to calculating the 90th percentile and proper management of tap samples as required under the LCR. Please work with your states to ensure that they understand the requirements so that they may work with the public water systems under their jurisdiction to address any misinterpretations of the regulations. If you have additional questions or concerns, please contact me or have your staff contact Cynthia Dougherty, Director of the Office of Ground Water and Drinking Water at (202) 564-3750, or Ronald Bergman, Associate Chief of the Protection Branch in the Office of Ground Water and Drinking Water, at (202) 564-3823.

Attachment

cc: Regional Drinking Water Branch Chiefs
James Taft, Association of State Drinking Water Administrators

Attachment A
Tiering Classification System for Selection of Monitoring Sites

Tiering Classification	
If you are a Community Water System	***If you are an Non-transient Noncommunity Water System***
Tier 1 sampling sites are single family structures: with copper pipes with lead solder installed after 1982 *(but before the effective date of your State's lead ban)* or contain lead pipes; and/or that are served by a lead service line. ***Note :*** When multiple-family residences (MFRs) comprise at least 20% of the structures served by a water system, the system may count them as Tier 1 sites. **Tier 2** sampling sites consist of buildings, including MFRs: with copper pipes with lead solder installed after 1982 *(but before effective date of your State's lead ban)* or contain lead pipes; and/or that are served by a lead service line. **Tier 3** sampling sites are single family structures w/ copper pipes having lead solder installed before 1983.	**Tier 1** sampling sites consist of buildings: with copper pipes with lead solder installed after 1982 *(but before the effective date of your State's lead ban)*or contain lead pipes; and/or that are served by a lead service line. **Tier 2** sampling sites consist of buildings with copper pipes with lead solder installed before 1983. **Tier 3**: Not applicable.

Note:

- All States were required to ban the use of lead solder in all public water systems, and all homes and buildings connected to such systems by June 1988 (most States adopted the ban in 1987 or 1988). Contact the Drinking Water Program in your State to find out the effective date.
- A community water system with insufficient tier 1, tier 2 and tier 3 sampling sites, or an non-transient noncommunity water system with insufficient tier 1 and tier 2 sites, shall complete its sampling pool with representative sites throughout the distribution system. For the purposes of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system. [40 CFR 141.86(a)(5) and (7)]

Source: *Lead and Copper Monitoring and Reporting Guidance for Public Water Systems*, EPA-816-R-02-009