United States
Environmental Protection
Agency

Office of Water
4606

EPA 815-R-99-020
April 2000

# Lead and Copper Rule: Summary of Revisions

## TABLE OF CONTENTS

## LIST OF TABLES

## Disclaimer

The statements in this document are intended solely as guidance. This document is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation with the United States. EPA may decide to follow the guidance provided in this document, or to act at variance with the guidance based on its analysis of the specific facts presented. This guidance may be revised without public notice to reflect changes in EPA's approach to implementing the authorities discussed in the Guidance. This guidance may be revised without public notice to reflect changes in EPA's approach to implementing the authorities discussed in the Guidance or to clarify and update text.

# Lead and Copper Rule: Summary of Revisions

## Why Is EPA Revising the Lead and Copper Rule?

On June 7, 1991, the United States Environmental Protection Agency or EPA, published in the *Federal Register*, a regulation to control lead and copper in drinking water. This regulation is known as the Lead and Copper Rule (also referred to as the LCR or 1991 Rule).

On January 12, 2000, EPA published minor revisions to the 1991 Rule. The purpose of the Lead and Copper Rule Minor Revisions (LCRMR) is to eliminate unnecessary requirements, streamline and reduce reporting burden, and promote consistent national implementation. In some cases, EPA has added language which clarifies requirements and corrects oversights in the original rule. EPA calls the revisions "minor" because they do not affect the lead and copper maximum contaminant level goals, action levels, or other basic regulatory requirements to monitor for lead and copper at the tap and to optimize corrosion control.

## What Is the Purpose of This Guidance Document?

The purpose of this guidance document is to help water system owners and operators and States primacy agencies understand the new requirements of the LCRMR and when they must begin implementing these revisions. This guidance contains a discussion of each of the important revisions to water system requirements that were made to the 1991 Rule by the LCRMR, and identifies when systems must begin following these new requirements.

## How is this Guidance Document Organized?

- **What Special Terms Does A System or State Need to Know to Understand this Guidance Document?**
  This section provides definitions and explains any acronyms or short-hand terms that EPA has used in this document.

- **How Does A System Know When to Follow the Requirements of the LCRMR?**
  This section explains when systems and States should begin following the new requirements of the LCRMR. To help illustrate this explanation, EPA has also included tables in this section, which clearly show what changes have been made by the LCRMR, and where these revisions can be found in the federal regulation.

- **Appendix: The Lead and Copper Rule Minor Revisions Compared to the 1991 Rule**
  The Appendix shows through redlining (shading) and strikeout, the changes made to the 1991 Rule by the LCRMR. The redlining indicates new language added by the LCRMR and strikeout indicates language deleted by the LCRMR from the 1991 Rule. Redlined text looks like this. ~~Strikeout text looks like this.~~ Text that is neither redlined nor has a line through it, has not been changed by the LCRMR.

## What Special Terms Does A System or State Need to Know to Understand this Guidance Document?

| Term | Definition |
|---|---|
| 1991 Rule | This refers to the Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper. This regulation was published in the *Federal Register* on June 7, 1991 (56 FR 26460). EPA modified this rule with technical amendments that were published in the *Federal Register* on July 15, 1991 (56 FR 32113), June 29, 1992 (57 FR 28786), and June 30, 1994 (59 FR 33860). |
| 90th Percentile Value | The highest concentration of lead or copper in tap water that is exceeded by 10 percent of the sites sampled during a monitoring period. This value is compared to the lead or copper action level, to determine whether an action level has been exceeded. |
| Action Level | The concentration of lead or copper in tap water which determines whether a system may be required to install corrosion control treatment, collect water quality parameter samples, collect lead and copper source water samples, replace lead service lines, and/or deliver public education about lead. *The action level for lead is 0.015 mg/L. The action level for copper is 1.3 mg/L.* |
| Compliance Date | This is the date that systems and States must begin following a new provision under the LCRMR. |
| CWS | An acronym for community water system. |
| Daily Value | This is a new term introduced under the LCRMR. "Daily values" are the sample results of water quality parameters (WQPs) and are calculated for each WQP at each sampling location. They are based on the sampling frequency for that WQP and sampling point. |
| Excursion | This is also a new term under the LCRMR. It refers to a "daily value" for a WQP at a sampling location that is below the minimum value or outside the range of values designated by the State. |
| Full Waiver | This waiver allows a small system to collect both lead and copper tap samples at a frequency of once every 9 years and at a reduced number of sites. To receive this waiver, a system must meet the materials and monitoring criteria for both lead and copper [See §§141.86(g)(1) and (2)]. |
| LCR | An acronym for Lead and Copper Rule. Also referred to in this document as the 1991 Rule. |
| LCRMR | An acronym for the Lead and Copper Rule Minor Revisions that were published in the *Federal Register* on January 12, 2000 (65 FR 1950). |

| Term | Definition |
|---|---|
| LSLs | An acronym for lead service lines. Means a service line made of lead which connects the water main to the building inlet. It also includes any lead pigtail, gooseneck, or other fitting which is connected to the lead service line. |
| MDL | An acronym for Method Detection Limit. The MDL is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. |
| Monitoring Waiver | This is a new provision under the LCRMR. Systems that serve 3,300 or fewer people that meet specific materials and monitoring criteria can receive a waiver from the State. This waiver would allow systems to collect lead and/or copper once every 9 years at a reduced number of sites [See §141.86(g)]. |
| Monitoring Waiver - Materials Criteria | These criteria specify the types of materials that a small system cannot have in its distribution system, service lines, and drinking water supply plumbing, if it is to qualify for a lead and/or copper monitoring waiver [See §141.86(g)(1)]. |
| Monitoring Waiver - Monitoring Criteria | This term applies to the lead and/or copper $90^{th}$ percentile levels that a small system must have to qualify for a monitoring waiver under the LCRMR. To qualify for a waiver, a system's $90^{th}$ percentile lead level cannot be greater than 0.005 mg/L, and/or $90^{th}$ percentile copper level cannot be greater than 0.65 mg/L [See §141.86(g)(2)]. |
| NTNCWS | An acronym for a non-transient non-community water system. |
| Optimized | A short-hand description for systems that are considered to have optimized corrosion control, that is, have water that is minimally corrosive either naturally or because of treatment of the water. |
| OWQPs | An acronym for optimal water quality parameters. They are specific ranges or minimums that are determined by the State for each relevant WQP. OWQPs represent the conditions under which systems must operate their corrosion control treatment to most effectively minimize the lead and copper concentrations at their users' taps. |
| Partial Replacement | This phrase refers to any lead service line replacement effort in which the system does not replace the entire length of a lead service line up to the building inlet. When this happens, the system has certain requirements for monitoring and for notifying the people who drink its water [See §141.84(d)]. |
| Partial Waiver | This type of waiver may be granted if a small system meets the materials and monitoring criteria for either lead or copper, but not both. It allows the system to monitor once every 9 years at a reduced number of sites for the contaminant for which it receives the waiver. The State may elect not to grant partial waivers [See §141.86(g)]. |

| Term | Definition |
|---|---|
| Pre-existing Waiver | A monitoring waiver that was granted for lead and copper tap monitoring prior to April 11, 2000 [See §141.86(g)(7)]. |
| PQL | An acronym for Practical Quantitation Level. The PQL is the lowest concentration that can be reliably achieved by well-operated laboratories (EPA and State laboratories) within specified limits of precision and accuracy during routine laboratory operating conditions. |
| Primacy | A short-hand term for primary enforcement responsibility. Some States have primacy for the Lead and Copper Rule, which means they have the primary enforcement responsibility for enforcing this rule in their States. If a State does not have primacy for the LCR, EPA has primacy for the LCR for that State. Besides States, tribal governments can also be primacy agencies. |
| Special-case CWS | A public water system, such as a prison or hospital, where the population served cannot make improvements to plumbing or install point-of-use treatment devices and where the system does not charge the users for water consumption. Under the LCRMR, this type of system is treated like a NTNCWS for certain monitoring and public education requirements. |
| State | Refers to the government agency that enforces compliance with drinking water regulations and assists systems in understanding and implementing these regulations. For most systems, this is an organization within the State government (e.g., Department of Natural Resources, Department of Environmental Quality, Department of Health). For DC, WY, and Native American Lands, the contact is often from the respective EPA Regional Office. |
| WQPs | An acronym for water quality parameters. After corrosion control treatment is installed, WQPs include: pH, alkalinity *(when alkalinity is adjusted)* , orthophosphate *(when an inhibitor containing a phosphate compound is used)*, silica (*when an inhibitor containing a silicate compound is used)*, and calcium *(when calcium carbonate stabilization is used as part of corrosion control).* |

## How Does A System Know When to Follow the Requirements of the LCRMR?

**Effective Dates of the 1991 Rule**

The requirements of the 1991 Rule were effective on two different dates. The requirements pertaining to system monitoring and reporting requirements, which are specified in §§141.86 through 141.90, took effect on July 7, 1991. Those sections of the regulation that specified treatment, public education, and lead service line replacement requirements, that are contained in §§141.81 through 141.85, took effect on December 7, 1992. As illustrated in Tables 1a through 10 and the Appendix, many of the requirements under the LCR were not changed by the LCRMR. In these instances, the effective dates of July 7, 1991 and December 7, 1992 still apply.

**Effective Dates of the LCRMR**

The Federal effective date of the LCRMR is April 11, 2000, (i.e., 90 days after publication of the rule in the *Federal Register*.) However, this may not be the date on which a system must comply with the new requirements.

The new LCRMR provisions fall into two broad categories.

1. **Those that systems and States must begin implementing on April 11, 2000.**

These provisions are *more stringent* than the 1991 LCR or provide clarification to requirements that EPA intended in the 1991 LCR.

2. **Those that systems and States may not be able to implement until and unless the State writes them into its drinking water regulation** *("adopts" them)*.

Many of the new provisions are designed to add flexibility and improvements in implementation. These provisions are less stringent than the 1991 LCR. They are effective April 11, 2000 at the federal level. State regulations with more stringent requirements will remain in effect in most States until the States adopt their own regulations in response to the LCRMR. In many instances, the State has the choice whether or not to incorporate these less stringent requirements into its regulations. Also, the State has until January 12, 2002 to revise its regulations and under certain circumstances, EPA may grant the States an extension of up to two additional years to make these changes. *Systems should check with the State before following any provisions that are less stringent than the ones they were following prior to the LCRMR.*

**About the Tables Contained in this Document**

EPA has summarized the major changes made by the LCRMR in a table format. The tables do not list revisions such as punctuation changes or renumbering of paragraphs within the regulation. They also do not contain changes to State requirements that are found in §§142.14 through 142.16. For the exact wording of the regulatory changes that systems and States must follow, refer to Appendix A.

The tables are organized by major rule section (i.e., §141.81, §141.82, §§141.84-141.90, and §141.43). Some tables are further divided into an "a" and "b" table; where the "a" table contains those provisions that systems must begin following on April 11, 2000, and the "b" table contains those revisions that a system may be unable to implement until the State adopts them into its regulations. The changes to the remaining rule sections fall under one of the two categories, and therefore, only one table is needed for each section.

Each table contains two columns. The first column describes each new or changed provision. The second column shows the corresponding federal regulatory citation for the changed or new provision.

The LCRMR do not impact any of the requirements in §141.80 (General requirements), §141.83 (Source water treatment requirements), and §141.91 (Recordkeeping requirements for systems). Therefore, these sections are not included in any of the tables. Systems must continue to follow the requirements in these three unchanged sections.

**Remember:** The citations in Column 2 of the tables correspond to the federal regulation. The State's drinking water regulation may contain different wording, be organized differently, and may even be more stringent than the federal regulations. A system should contact the appropriate State agency for a copy of its regulations.

# Section 141.81

## Applicability of Corrosion Control Treatment Steps to Small, Medium-Size and Large Water Systems

Sections Impacted by the LCRMR

§§141.81(b), (b)(2) - (b)(3)

**Table 1a: Applicability of Corrosion Control Treatment Steps to Small, Medium-Size and Large Water Systems**

**Systems must begin complying with the requirements in Table 1a on April 11, 2000.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| EPA has added wording to the LCRMR that clarifies the intent of the 1991 Rule. More specifically, a system that has: | |
| • Corrosion control treatment but is not required to conduct water quality parameter (WQP) monitoring must:<br>1. Properly operate and maintain corrosion control treatment at all times; and<br>2. Meet any requirements the State deems are needed to ensure this treatment is maintained. | §141.81(b) |
| • If, prior to December 7, 1992, a system completed treatment steps equivalent to those described in the 1991 LCR, it must:<br>1. Routinely monitor for WQPs after the State designates optimal water quality parameters (OWQPs) *(unless it serves 50,000 or fewer people and no longer exceeds an action level)*; and<br>2. Continue lead and copper tap sampling. | §141.81(b)(2) |

**Table 1a: Applicability of Corrosion Control Treatment Steps to Small, Medium-Size and Large Water Systems**

**Systems must begin complying with the requirements in Table 1a on April 11, 2000.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| If a system has demonstrated that the difference between its 90$^{th}$ percentile lead level at the tap and the highest concentration of lead in its source water is less than 0.005 milligrams per liter (mg/L) for 2 consecutive, 6-month periods, it must: | |
| 1. Collect a round of lead and copper tap samples between October 1, 1997 and September 30, 2000 at the reduced number of sites and continue monitoring every 3 years thereafter; | §141.81(b)(3)(ii) |
| 2. Notify the State in writing of any change in treatment or addition of a new source within 60 days of the change, unless the State requires earlier notification. The State may require the system to conduct additional monitoring or perform other activities to ensure that optimal corrosion control is maintained. | §141.81(b)(3)(iii) |
| 3. Not exceed the copper action level after July 12, 2001; and | §141.81(b)(3)(iv) |
| 4. Begin corrosion control treatment steps if during any round of monitoring:<br>① the difference between its 90$^{th}$ percentile lead and source water levels is more than 0.005 mg/L, *(and it serves more than 50,000 people)*; ***or***<br>② it is above the lead action level *(any size system*); ***or***<br>③ above the copper action level on or after July 12, 2001 *(any size system)*. | §141.81(b)(3)(v) |
| ***Note:*** *A system that serves more than 50,000 people, and is triggered into corrosion control treatment steps (for one of the 3 reasons listed above), must follow the corrosion control treatment schedule for medium-size systems outlined in §141.81(e), beginning with the requirement to complete a corrosion control study. The system must complete this study within 18 months of the date it was triggered into conducting the corrosion control treatment steps.* | |

**Table 1b: Applicability of Corrosion Control Treatment Steps to Small, Medium-Size and Large Water Systems**

**Systems must check with their States before following any of the provisions in Table 1b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| If a system's source water lead levels are below the Method Detection Limit (MDL) and its 90$^{th}$ percentile lead level is 0.005 mg/L or less for 2 consecutive, 6-month monitoring periods, the State may deem the system to be optimized under §141.81(b)(3). *(The system would then be affected by the provisions described on page 9.)* | §141.81(b)(3)(i) |

# Section 141.82

## Description of Corrosion Control Treatment Requirements

Section Impacted by the LCRMR

§141.82(g)

**Table 2: Description of Corrosion Control Treatment Requirements**

**Systems must check with their States before following any of the provisions in Table 2.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| The LCRMR modify the procedure for assessing compliance with WQP monitoring after the State has designated OWQPs. | §141.82(g) |
| • Compliance determinations are always based on a 6-month period, regardless of a system's monitoring schedule (e.g., daily, biweekly, semi-annually, annually, triennially) or whether the sample is from an entry point or tap. | |
| • Daily values are calculated for each WQP at each sampling location, and are based on the sampling frequency for that WQP and sampling point. | |
| • An excursion is any "daily value" for a WQP that is below the minimum value or outside the range of OWQPs set by the State. | |
| • A system cannot have excursions for more than a total of 9 days during a 6-month period. | |
| • Daily values for a sampling location are calculated as follows: | |
| **S** On days when more than one measurement for a WQP is collected, the daily value is the average of all results collected during the day, regardless of whether the measurements are collected using continuous monitoring, grab sampling, or both. *The State can specify a procedure other than averaging if EPA has approved this alternative.* | §141.82(g)(1) |
| **S** On days when only one measurement is collected, the daily value is the result of that single measurement. | §141.82(g)(2) |
| **S** On days when no measurement is collected for a WQP at a sampling location, the daily value is the one that was calculated on the most recent day on which the WQP was measured at the sampling site. | §141.82(g)(3) |

**Note:** For a more detailed discussion of the revised procedure for assessing compliance with OWQPs, refer to: *How to Determine Compliance with Optimal Water Quality Parameters as Revised by the Lead and Copper Rule Minor Revisions*, April 2000, EPA 815-R-99-019.

# Section 141.84

## Lead Service Line Replacement Requirements

Sections Impacted by the LCRMR

§141.84(b)
§141.84(d)
§141.84(e)
§141.84(f)
§141.84(g)
§141.84(h)

**Table 3: Lead Service Line Replacement Requirements**

**Systems must begin complying with the requirements in Table 3 on April 11, 2000.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| A system now must document in its files the portions of lead service lines (LSLs) that it owns and the relevant legal authorities. | §141.84(b) |
| Under the LCRMR, a system:<br>• Must replace the portion of the LSL that it owns.<br>• Must notify the owner (or owner's authorized agent) about the replacement, and offer to replace the owner's portion of the line.<br>• Is not required to pay for replacing the privately-owned portion of the line.<br>• Is not required to replace the privately-owned portion of the line if precluded by law, or where the owner chooses not to pay the cost of replacing the privately-owned portion.<br>In those instances where it does not replace the privately-owned portion of the line, the system must: | §141.84(d) |
| • Notify all residents served by the line the system is replacing, at least 45 days prior to partial replacement. The State can allow the system to provide less advanced notice if the line is being replaced in conjunction with emergency repairs.<br>• Collect a sample representative of the water in the service line and have it analyzed for lead within 72 hours of the partial LSL replacement.<br>• Report the results of the analysis to the owner and residents affected by the replacement within 3 business days of receiving these results. | §141.84(d)(1) |

**Note:** For more information on partial lead service line notification and reporting requirements, refer to: *Notification and Reporting Requirements for Partial Lead Service Line Replacement under the Lead and Copper Rule*, April 2000, EPA 815-R-99-022.

# Section 141.85

## Public Education and Supplemental Monitoring Requirements

Sections Impacted by the LCRMR

§141.85(a)
§§141.85(c)(2), (c)(4), (c)(7), (c)(8)

**Table 4: Public Education and Supplemental Monitoring Requirements**

**Systems must check with their States before following any of the provisions in Table 4.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Note:** EPA restructured §141.85(a) to allow separate written language for community water systems (CWSs) and non-transient non-community water systems (NTNCWSs). This required EPA to extensively renumber the paragraphs within §141.85(a). Refer to Appendix A for a comparison of the numbering scheme used in the 1991 Rule and the LCRMR. Those numbers that are redlined (shaded) indicate the new numbering under the LCRMR. Those numbers with a line through them (~~or strikeout~~) are the citations from the 1991 Rule. | |
| **Any Community Water System:**<br>• May make the following modifications to its mandatory public education language:<br>S Delete information regarding LSLs (found in §141.85(a)(1)(i) & §141.85(a)(1)(iv)(B)*(5)*), ***if*** *it does not have any in its service area* ***and*** *it receives State approval*.<br>S Change the language regarding the availability of building permit records and consumer access to these records, ***if*** *it receives State approval*.<br>S Delete the references to "control" of a LSL.<br>• Can use up its old public education material, even after the LCRMR have taken effect. | §141.85(a)(1)(i) |
| • Must discuss, in newly printed public education materials, its responsibilities to its customers if it replaces only part of a LSL. | §141.85(a)(1)(iv)(B)(*5*) |
| • Has the flexibility to do a separate mailing of public education materials if it is difficult to send the materials with the regular bills. The CWS must include the "alert" language and deliver the mailing within 60 days of exceeding the lead action level. | §141.85(c)(2)(i) |
| EPA has also clarified in the rule that CWSs are only required to deliver public education materials within 60 days of exceeding the lead action level, if:<br>• This is the first time the system has exceeded the action level, *or*<br>• It is exceeding the action level again after having monitoring periods in which it was below the lead action level. | §141.85(c)(2) |

**Table 4: Public Education and Supplemental Monitoring Requirements**

**Systems must check with their States before following any of the provisions in Table 4.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **A CWS that serves 500 or fewer persons:**<br>• Does not have to deliver public service announcements.<br>• Does not have to notify the public via newspapers, and<br>• Can limit the distribution of pamphlets to facilities that most regularly serve pregnant women and children, ***but it must also***:<br>**S** mail or hand deliver the public education materials to all of its customers who don't already receive water bills.<br>**S** repeat these tasks at least once during each calendar year in which it exceeded the lead action level. | §§141.85(c)(8)(i)-(ii) |
| **A CWS that serves 501 to 3,300 persons:**<br>• Does not have to deliver public service announcements.<br>• *With State permission:*<br>**S** does not have to notify the public via newspapers, and<br>**S** can limit the distribution of pamphlets to facilities that most regularly serve pregnant women and children, *but it must also*:<br>mail or hand deliver the public education materials to all of its customers who don't already receive water bills.<br>repeat these tasks at least once during each calendar year in which it exceeds the lead action level. | §§141.85(c)(8)(i)-(ii) |
| **A *Special-case CWS*, such as a prison or a hospital can:**<br>• Request, *in writing*, permission from the State to use the new alternate language for NTNCWSs, and<br>• Request, *in writing*, permission from the State to use the alternate delivery methods allowed for NTNCWSs. | §§141.85(c)(7)(i)-(ii) |

**Table 4: Public Education and Supplemental Monitoring Requirements**

**Systems must check with their States before following any of the provisions in Table 4.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Any NTNCWS can:** | |
| • Use the mandatory language specified for CWSs or the new language that is geared toward NTNCWSs. | §§141.85(a)(2)(i)-(iv) |
| • Delete information pertaining to LSLs (found in §141.85(a)(2)(i)), ***if*** *it does not have any in its service area* ***and*** *it receives State approval*. | |
| • Substitute electronic transmission of public education information instead of or with printed materials, as long as this achieves at least the same coverage. | §141.85(c)(4)(ii) |
| EPA has also clarified in the rule that NTNCWSs are only required to deliver public education materials within 60 days of exceeding the lead action level, if: | §141.85(c)(4) |
| • This is the first time the system has exceeded the action level, *or* | |
| • It is exceeding the action level again after having monitoring periods in which it was below the lead action level. | |

# Section 141.86

## Monitoring Requirements for Lead and Copper in Tap Water

Sections Impacted by the LCRMR

§§141.86(a)(5), (a)(7) - (a)(9)
§§141.86(b)(1), (b)(2), (b)(5)
§141.86(c)
§§141.86(d)(4)(ii) - (vii)
§141.86(f)
§141.86(g)

**Table 5a: Monitoring Requirements for Lead and Copper in Tap Water**

**Systems must begin complying with the requirements in Table 5a on April 11, 2000.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Sample Site Selection and Collection Methods** | |
| A CWS without enough Tier 1, 2, or 3 sampling sites, or a NTNCWS without enough Tier 1 or 2 sites, must complete its sampling pool with *representative* sites. | §§141.86(a)(5) & (7) |
| The LCRMR clarify that first-draw samples taken at a nonresidential building must be one liter in volume. | §141.86(b)(2) |
| **Reduced Monitoring** | |
| States now have the authority to specify which sampling locations a system must use if it is collecting lead and copper tap samples at the reduced number of sites.<br><br>The reduced sampling sites must be representative of the standard monitoring sites. | §141.86(c)<br><br>§§141.86(c) & (d)(4)(iv) |
| A system, that is on reduced lead and copper tap monitoring and is required to resume standard monitoring, may again reduce the frequency of monitoring at the reduced number of sites as follows:<br><br>• It may resume annual monitoring if it completes 2 consecutive, six-month rounds of monitoring that meet the criteria of §141.86(d)(4)(ii) and it receives written approval from the State.<br><br>• It may resume triennial monitoring if it completes subsequent rounds of monitoring that meet the criteria of either §§141.86(d)(4)(iii) or (d)(4)(v) and it receives written approval from the State. | §141.86(d)(4)(vi)(B) |
| A system that is on a reduced lead and copper tap monitoring schedule, and that adds a new source or changes treatment, must notify the State in writing within 60 days of this addition or change.<br><br>*The State may require the system to:*<br><br>• Notify it of this change earlier than 60 days, *and/or*<br><br>• Undertake additional measures, such as commencing standard monitoring, increasing WQP monitoring, or re-evaluating corrosion control treatment. | §141.86(d)(4)(vii) |

**Table 5b: Monitoring Requirements for Lead and Copper in Tap Water**

**Systems must check with their States before following any of the provisions in Table 5b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Sample Site Selection and Collection Methods** | |
| A system no longer has to justify to the State in writing why it could not use enough Tier 1 sites. | Deleted from rule language |
| A system must still collect 50 percent of its samples from sites with LSLs, lead pipes, or copper pipes with lead solder, but if it is unable to find enough of these sampling sites, it no longer provide a written explanation to the State. | §141.86(a)(8) |
| A NTNCWS (or a special-case CWS) can now apply to the State to use non-first-draw samples if it does not have enough taps to supply first-draw samples. It must collect as many first-draw samples as possible and collect the remaining samples from sites with the longest standing times possible.<br><br>The State can waive this up-front approval either through regulation or written notification to the system. | §141.86(b)(5) |
| A non-first-draw sample must be one liter in volume and must be collected from an interior tap that is typically used to provide drinking water.<br><br>The LCRMR now make the minimum holding time for acidified lead and copper samples consistent with the analytical methods for other metals (i.e., 16 hours). This replaces the original requirement to have the sample stand in the original container for at least 28 hours after acidification. | §141.86(b)(2) |

**Table 5b: Monitoring Requirements for Lead and Copper in Tap Water**

**Systems must check with their States before following any of the provisions in Table 5b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Reduced Monitoring** | |
| A system is no longer required to request reduced monitoring status from the State. Rather, the State must notify the system in writing when it determines that it is eligible to begin reduced lead and copper tap monitoring. This change applies to both annual and triennial reduced monitoring. | §§141.86(d)(4)(ii) & (iii) |
| A State can allow a system that is on a reduced lead and copper tap monitoring schedule to collect samples in months other than June through September, *if the alternate period*:<br>• Is no longer than 4 consecutive months.<br>• Represents a time of normal operation for the system when the highest levels of lead are most likely to occur. | §141.86(d)(4)(iv)(A) |
| The LCRMR specify a transition period for switching to a new monitoring period, in those instances where the State designates such an alternate monitoring period.<br>• Systems on annual monitoring must collect their next round of samples no later than 21 months after the previous round of sampling.<br>• Systems on triennial monitoring must collect their next round of samples no later than 45 months after the previous round of sampling.<br>• Small systems with waivers must collect their next round of samples before the end of the 9-year period. | §141.86(d)(4)(iv)(B) |
| EPA has added an accelerated monitoring provision that allows a system to reduce sampling to once every 3 years after only 2 consecutive, 6-month periods of monitoring ***if*** it has the following 90$^{th}$ percentile lead and copper levels at the tap:<br>• Lead level of less than or equal to 0.005 mg/L; ***and***<br>• Copper level of less than or equal to 0.65 mg/L | §141.86(d)(4)(v) |
| The LCRMR clarify that a small or medium-sized system on a reduced monitoring schedule must resume standard monitoring for lead and copper tap samples and WQP tap samples, if it fails to meet its OWQPs using the new compliance procedure established under the LCRMR (see Table 2). | §§141.86(d)(4)(vi)(A) & (B) |

**Table 5b: Monitoring Requirements for Lead and Copper in Tap Water**

**Systems must check with their States before following any of the provisions in Table 5b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Sample Invalidation** | |
| A system may request the State to invalidate a lead or copper tap sample if it can document that ***at least one*** of the following conditions has occurred:<br>• The lab documents that the sample was analyzed improperly;<br>• The State determines that the sample was taken from an improper site;<br>• The sample container was damaged in transit; and/or<br>• The sample was subject to tampering.<br>Invalidated samples do not count toward compliance requirements. | §§141.86(f)(1)(i)-(iv) |
| To request sample invalidation, a system must report the results of all the samples to the State, and provide supporting documentation for all the samples it believes should be invalidated. | §141.86(f)(2) |
| The State must present its decision on whether or not to invalidate a system's sample(s) in writing.<br>The State may not invalidate a sample simply because the results of a follow-up sample are higher or lower than that of the original sample. | §141.86(f)(3) |
| If the State invalidates a system's sample and the system does not have enough valid samples to meet minimum sampling requirements, the system must collect replacement sample(s):<br>• No later than 20 days after the date the sample was invalidated, or by the end of the monitoring period, whichever occurs later.<br>• From the same locations as the invalidated samples, or if this is not possible, at locations that the system has not already used for sampling during that monitoring period.<br>A system cannot use these replacement samples to meet the monitoring requirements of a subsequent monitoring period. | §141.86(f)(4) |

**Table 5b: Monitoring Requirements for Lead and Copper in Tap Water**

**Systems must check with their States before following any of the provisions in Table 5b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Monitoring Waivers** | |
| The State can grant a monitoring waiver to a system that serves 3,300 or fewer people, if the system meets certain criteria. If the system qualifies, it only has to collect lead and/or copper tap samples once every 9 years. | §141.86(g) |
| • To qualify for a full waiver (for both lead and copper), a system must certify to the State that it meets specific materials criteria for lead in its distribution system and drinking water plumbing.<br>• To qualify for a partial waiver (for either lead ***or*** copper), it only needs to meet the materials criteria for the particular contaminant for which it is requesting a waiver. | §§141.86(g)(1)(i) & (ii) |
| A system must meet the monitoring criteria below to receive a full waiver:<br>• Its 90$^{th}$ percentile lead level must be less than or equal to 0.005 mg/L ***and***<br>• Its 90$^{th}$ percentile copper level must be less than or equal to 0.65 mg/L.<br>For a partial waiver, a system only needs to meet the monitoring criteria for the contaminant for which it is requesting a waiver. | §§141.86(g)(2)(i) & (ii) |
| A system cannot start monitoring according to the waiver until it receives approval from the State, in writing. The State can require a system to perform additional activities, as a condition of the waiver. | §141.86(g)(3) |
| If a system receives a full waiver, it must:<br>• Monitor for lead and copper at the tap at least once every 9 years, at the reduced number of sampling sites.<br>• Submit a materials re-certification to the State with its sample results. | §141.86(g)(4)(i) |
| If a system receives a partial waiver, it must:<br>• Monitor and submit re-certification for the waivered contaminant as stated above.<br>• Monitor for the non-waivered contaminant according to §§141.86(d)(1) through (d)(4), as appropriate. | §141.86(g)(4)(ii) |

**Table 5b: Monitoring Requirements for Lead and Copper in Tap Water**

**Systems must check with their States before following any of the provisions in Table 5b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| **Monitoring Waivers (Continued)** | |
| A system that has received a waiver, and later adds a new source of water or changes treatment must notify the State in writing within 60 days of the change. The State may add to or modify the waiver conditions, if it needs to address the treatment or source changes. | §141.86(g)(4)(iii) |
| A system that becomes aware that it is no longer free of lead- or copper-containing materials must notify the State in writing within 60 days. | §141.86(g)(4)(iv) |
| A waiver will be renewed, unless a system's waiver is revoked because it no longer satisfies the monitoring criteria, materials criteria, and/or the State notifies it in writing that the waiver has been revoked. If a system's waiver is revoked, it can re-apply for a waiver. | §§141.86(g)(5)(i)-(iii) |
| If the waiver has been revoked ***and the system***:<br>• Exceeds the lead and/or copper action level, it must implement corrosion control treatment, and any other applicable requirements.<br>• Is at or below both action levels, it must monitor for lead and copper at least once every 3 years. | §§141.86(g)(6)(i) & (ii) |
| If the State issued a waiver to the system in writing prior to April 11, 2000, the system may keep its waiver status if the system:<br>• ***Has*** conducted monitoring that meets the monitoring criteria, ***and***:<br>**S** continues to meet the materials and monitoring criteria, and<br>**S** the State has not notified the system that its waiver has been revoked.<br>• ***Has not*** conducted monitoring that meets the monitoring criteria, ***but***:<br>**S** it conducts a round of monitoring by September 30, 2000 that meets the monitoring criteria;<br>**S** it continues to meet the monitoring criteria; and<br>**S** the State has not notified the system that its waiver has been revoked.<br>If a system maintains its waiver status, it must complete its next round of monitoring no later than 9 years after it last conducted tap monitoring. | §§141.86(g)(7)(i) & (ii) |

**Note:** For more information on monitoring waivers, refer to: *Monitoring Waivers under The Lead and Copper Rule Minor Revisions for Systems Serving 3,300 or Fewer People*, April 2000, EPA 815-R-99-021.

# Section 141.87

## Monitoring Requirements for Water Quality Parameters

Sections Impacted by the LCRMR

§141.87(a)(2)(ii)
§§141.87(c)(2), (c)(3)
§141.87(d)
§§141.87(e)(2), (e)(4)

| Table 6a: Monitoring Requirements for Water Quality Parameters | |
|---|---|
| **Systems must begin complying with the requirements in Table 6a on April 11, 2000.** | |
| **How do the LCRMR change a system's requirements?** | **Where is this revision in the LCRMR?** |
| EPA has added language that clarifies that monitoring once every two weeks is the minimum frequency for WQP monitoring at entry points. | §141.87(c)(2) |

**Table 6b: Monitoring Requirements for Water Quality Parameters**

**Systems must check with their States before following any of the provisions in Table 6b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| A ground water system, that has installed corrosion control treatment, may now limit entry point sampling for WQPs to entry points that are ***representative*** of water quality conditions throughout its system, if it has prior approval from the State of its sampling plan. | §141.87(c)(3) |
| If the State has set OWQPs, compliance with OWQPs must be determined:<br>• Every 6 months, with the first 6-month period beginning on the date, the State specified the OWQPs.<br>• Using the new procedure that is specified under §141.82(g).<br>EPA has also defined the timing of a 6-month monitoring period for small and medium systems on reduced lead and copper tap monitoring that are triggered into WQP monitoring because of an action level exceedance. For these systems, the end of the six-month period for WQP monitoring is synchronized with the end of the reduced lead and copper tap monitoring period during which an action level was exceeded. | §141.87(d) |
| EPA has added an accelerated reduced monitoring provision for WQPs. A system can now reduce the frequency of WQP monitoring at the tap to once every three years more rapidly than before. In order to qualify, a system must:<br>• Demonstrate for 2 consecutive 6-month monitoring periods that its $90^{th}$ percentile lead level is no more than 0.005 mg/L and $90^{th}$ percentile copper level is no more than 0.65 mg/L, and<br>• Be in compliance with its OWQP requirements. | §141.87(e)(2)(ii) |
| EPA has also added language that clarifies that any water system that is out of compliance with its OWQPs using the new compliance procedure under §141.82(g) (refer to Table 2) is ineligible to conduct reduced monitoring for WQPs within the distribution system. The language also specifies when a system can requalify for annual or triennial WQP tap monitoring. | §141.87(e)(4) |

# Section 141.88

## Monitoring Requirements for Lead and Copper in Source Water

Sections Impacted by the LCRMR

§141.88(a)(1)
§§141.88(e)(1), (e)(2)

| Table 7a: Monitoring Requirements for Lead and Copper in Source Water | |
|---|---|
| **Systems must begin complying with the requirements in Table 7a on April 11, 2000.** | |
| **How do the LCRMR change a system's requirements?** | **Where is this revision in the LCRMR?** |
| EPA has clarified that compositing must be done by certified lab personnel.<br><br>EPA has revised the resampling trigger for composite samples to:<br><br>• greater than or equal to 0.001 mg/L for lead, and<br><br>• greater than or equal to 0.160 mg/L for copper. | §141.88(a)(1)(iii) |

| Table 7b: Monitoring Requirements for Lead and Copper in Source Water | |
|---|---|
| **Systems must check with their States before following the provisions in Table 7b.** | |
| **How do the LCRMR change a system's requirements?** | **Where do I find this revision in the LCRMR?** |
| EPA has added a provision that expands the universe of systems that can qualify for reduced source water monitoring.<br><br>A system that exceeds an action level may conduct source water monitoring once every 9 years ***if***:<br><br>• The State has determined that source water treatment is unnecessary;<br><br>• The system has source water lead levels of 0.005 mg/L or less and source water copper levels of 0.065 mg/L or less; and<br><br>• The system has maintained these source water levels for 3 consecutive, 3-year compliance periods (for groundwater systems) or 3 consecutive years (surface water systems). | §§141.88(e)(1) & (2) |

# Section 141.89

## Analytical Methods

Section Impacted by the LCRMR

§141.89(a)(1)(iii)

**Table 8: Analytical Methods**

**Systems must check with their States before following the provision in Table 8.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| Laboratories are no longer required to achieve the copper MDL in order to accept composite samples. This requirement is unnecessary now that EPA has revised the copper resampling trigger to 0.160 mg/L. | §141.89(a)(1)(iii) |

# Section 141.90

## Reporting Requirements

Sections Impacted by the LCRMR

§§141.90(a)(1), (a)(1)(ii)-(iv), (a)(1)(vii), & (a)(1)(viii)
§141.90(a)(2)
§141.90(a)(3)
§141.90(a)(4)
§141.90(a)(5)
§§141.90(e)(2)(i) & (ii), (e)(4)
§§141.90(f)(1) & (2)
§141.90(h)

**Table 9a: Reporting Requirements**

**Systems must begin complying with the requirements in Table 9a on April 11, 2000.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| A system that collects lead and copper tap samples less frequently than every 6 months must notify the State within 60 days of any change to its treatment or the addition of a new source. | §141.90(a)(3) |
| A system that replaces only a portion of a LSL *("partial replacement")* is subject to the following reporting requirements:<br>• The system must report the results of the post-replacement lead sample to the State within the first 10 days of the month following the month in which it received these analytical results.<br>• The State can eliminate the above requirement or require a system to report additional information to verify that it has completed all partial LSL replacement activities. | §141.90(e)(4) |
| A system that is required to deliver public education:<br>• Must submit written documentation to the State, that demonstrates compliance with its public education requirements, within 10 days of the end of each period in which it is required to perform public education tasks.<br>• Is not required to submit its public education distribution list as part of its public education compliance letter, ***if***:<br>S it has previously submitted this information to the State, ***and***<br>S it certifies that this list has not changed. | §§141.90(f)(1)(i) & (ii)<br>§141.90(f)(2) |

**Table 9b: Reporting Requirements**

**Systems must check with their States before following any of the provisions in Table 9b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| The LCRMR eliminate many of the reporting requirements. A system is no longer required to:<br>• Certify that its samples are first-draw.<br>• Certify that samples were collected properly by residents.<br>• Justify in writing to the State why it has used other than Tier 1 sites.<br>• Explain to the State in writing why 50 percent of its sampling sites are not served by LSLs.<br>• Explicitly request the State to allow it to go on reduced monitoring.<br>• Demonstrate that it has limited control of a LSL. | Deleted from rule language |
| The LCRMR require a system to submit the following information in order to take advantage of some of the new provisions: | |
| • A system that is requesting sample invalidation must send documentation to the State for each sample it wishes to have invalidated. | §141.90(a)(1)(ii) |
| • A NTNCWS or special-case CWS without enough taps for first-draw samples must either:<br>**S** Provide to the State in writing an identification of the standing times and locations for the non-first-draw samples, ***or***<br>**S** If the State has waived prior approval of non-first-draw sample sites, identify, in writing, each site that did not meet the minimum standing time and its actual length of standing time. A system must send this information to the State along with the sample results for lead and copper. | §§141.90(a)(2)(i) & (ii) |

**Table 9b: Reporting Requirements**

**Systems must check with their States before following any of the provisions in Table 9b.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| • A small system that is requesting a monitoring waiver must submit documentation to the State that demonstrates that it has meet the materials and monitoring criteria.<br><br>• A small system that wishes to maintain its monitoring waiver must provide documentation to the State that demonstrates that it has meet the materials and monitoring criteria. This documentation must be provided no later than 9 years after the system last conducted lead and copper tap monitoring,<br><br>• A system with a waiver, that has discovered that it has lead-containing or copper-containing materials in its distribution system, must notify the State within 60 days of the discovery.<br><br>• A system that was granted a waiver prior to April 11, 2000 must provide, no later than October 10, 2001, the required monitoring information to the State in order to retain its waiver. | §§141.90(a)(4)(i)-(iv) |
| • A ground water system that wishes to limit WQP monitoring to a subset of representative entry points must send to the State identification and documentation on the selected entry points. | §141.90(a)(5) |
| • A system is not required to report 90$^{th}$ percentile lead or copper values if the State has notified the system that it will calculate the 90$^{th}$ percentile values for the system.<br><br>***However:***<br><br>**S** the system must send the State the sample results and site selection information by the State-specified deadline, along with an explanation for any sample sites that have changed.<br><br>**S** the State must provide the results of the calculations, in writing, to the system before the end of the monitoring period. | §§141.90(h)(1)-(3) |
| The LCRMR also clarify that a system must report WQP monitoring results within the first 10 days following the end of the 6-month monitoring period specified in §141.87(d). | §141.90(a)(1)(viii) |

# Section 141.43

## Prohibition on Use of Lead Pipes, Solder, and Flux

Sections Impacted by the LCRMR

§141.43(a)(2)
§141.43(b)(2)
§141.43(d)

**Table 10: Prohibition on Use of Lead Pipes, Solder, and Flux**

**Systems must begin complying with the requirements in Table 10 on April 11, 2000.**

| How do the LCRMR change a system's requirements? | Where is this revision in the LCRMR? |
|---|---|
| EPA has deleted the one-time requirement for a system to identify and notify persons that may be affected by lead contamination of its drinking water. This requirement was to be completed by June 1988 and is less comprehensive than the public education requirements.<br><br>EPA therefore has deleted these requirements. | §§141.43(a)(2) & (b)(2) |
| EPA has also revised the definition of "lead free" to reflect the provisions of Sections 1417(d) and (e) of the 1996 Safe Drinking Water Act Amendments. | §141.43(d) |

# Appendix

# The Lead and Copper Rule Minor Revisions Compared to the 1991 Rule

# The Lead and Copper Rule Minor Revisions Compared to the 1991 Rule

**PART 141 -- NATIONAL PRIMARY DRINKING WATER REGULATIONS**

**Subpart E--Special Regulations, Including Monitoring Regulations and Prohibition on Lead Use**

**§141.43 Prohibition on use of lead pipes, solder, and flux.**

> ***Note:*** *The entire text of §141.43 is not included in this document; only the portions relevant to the LCRMR rulemaking have been included.*

(a) *In general*--(1) *Prohibition*. Any pipe, solder, or flux, which is used after June 19, 1986, in the installation or repair of--

(i) Any public water system, or

(ii) Any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water system shall be lead free as defined by paragraph (d) of this section. This paragraph (a)(1) shall not apply to leaded joints necessary for the repair of cast iron pipes.

(2) [Reserved] ~~Each public water system shall identify and provide notice to persons that may be affected by lead contamination of their drinking water where such contamination results from either or both of the following:~~

~~(i) The lead content in the construction materials of the public water distribution system,~~

~~(ii) Corrosivity of the water supply sufficient to cause leaching of lead.~~

~~Notice shall be provided notwithstanding the absence of a violation of any national drinking water standard. The manner and form of notice are specified in §141.34 of this part.~~

(b) *State enforcement*-- (1) *Enforcement of prohibition*. The requirements of paragraph (a)(1) of this section shall be enforced in all States effective June 19, 1988. States shall enforce such requirements through State or local plumbing codes, or such other means of enforcement as the State may determine to be appropriate.

(2) [Reserved] ~~*Enforcement of public notice requirements*. The requirements of paragraph (a)(2) of this section, shall apply in all States effective June 19, 1988.~~

(c) *Penalties*. If the Administrator determines that a State is not enforcing the requirements of paragraph (a) of this section, as required pursuant to paragraph (b) of this section, the Administrator may withhold up to 5 percent of Federal funds available to that State for State program grants under section

1443(a) of the Act.

(d) *Definition of lead free*. For purposes of this section, the term *lead free*:

(1) When used with respect to solders and flux refers to solders and flux containing not more than 0.2 percent lead~~;, and~~

(2) When used with respect to pipes and pipe fittings refers to pipes and pipe fittings containing not more than 8.0 percent lead~~.~~; and

(3) When used with respect to plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. section 300g-6(e).

**Subpart I -- Control of Lead and Copper**

**§141.80 General requirements.**

(a) *Applicability and effective dates*. (1) The requirements of this subpart I constitute the national primary drinking water regulations for lead and copper. Unless otherwise indicated, each of the provisions of this subpart applies to community water systems and non-transient, non-community water systems (hereinafter referred to as "water systems" or "systems").

(2) The requirements set forth in §§141.86 to 141.91 shall take effect on July 7, 1991. The requirements set forth in §§141.80 to 141.85 shall take effect on December 7, 1992.

(b) *Scope*. These regulations establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

(c) *Lead and copper action levels*. (1) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with §141.86 is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(2) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with §141.86 is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(3) The 90th percentile lead and copper levels shall be computed as follows:

(i) The results of all lead or 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 fewer 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.

(d) *Corrosion control treatment requirements*. (1) All water systems shall install and operate optimal corrosion control treatment as defined in §141.2.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the State under §§141.81 and 141.82 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section.

(e) *Source water treatment requirements*. Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the State under §141.83.

(f) *Lead service line replacement requirements*. Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in §141.84.

(g) *Public education requirements*. Any system exceeding the lead action level shall implement the public education requirements contained in §141.85.

(h) *Monitoring and analytical requirements*. Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this subpart shall be completed in compliance with §§141.86, 141.87, 141.88, and 141.89.

(i) *Reporting requirements*. Systems shall report to the State any information required by the treatment provisions of this subpart and §141.90.

(j) *Recordkeeping requirements*. Systems shall maintain records in accordance with §141.91.

(k) *Violation of national primary drinking water regulations*. Failure to comply with the applicable requirements of §§141.80-141.91, including requirements established by the State pursuant to these provisions, shall constitute a violation of the national primary drinking water regulations for lead and/or copper.

**§141.81 Applicability of corrosion control treatment steps to small, medium-size and large water systems.**

(a) Systems shall complete the applicable corrosion control treatment requirements described in §141.82 by the deadlines established in this section.

(1) A large system (serving >50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (d) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(2) or (b)(3) of this section.

(2) A small system (serving ≤3300 persons) and a medium-size system (serving >3,300 and ≤50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (e) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(1), (b)(2), or (b)(3) of this section.

(b) A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the system satisfies one of the ~~following~~ criteria: specified in paragraphs (b)(1) through (b)(3) of this section. Any such system deemed to have optimized corrosion control under this paragraph, and which has treatment in place, shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the State determines appropriate to ensure optimal corrosion control treatment is maintained.

(1) A small or medium-size water system is deemed to have optimized corrosion control if the

system meets the lead and copper action levels during each of two consecutive six-month monitoring periods conducted in accordance with §141.86.

(2) Any water system may be deemed by the State to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the State that it has conducted activities equivalent to the corrosion control steps applicable to such system under this section. If the State makes this determination, it shall provide the system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control in accordance with §141.82(f). Water systems deemed to have optimized corrosion control under this paragraph shall operate in compliance with the State-designated optimal water quality control parameters in accordance with §141.82(g) and continue to conduct lead and copper tap and water quality parameter sampling in accordance with §141.86(d)(3) and §141.87(d), respectively. A system shall provide the State with the following information in order to support a determination under this paragraph:

(i) The results of all test samples collected for each of the water quality parameters in §141.82(c)(3).

(ii) A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in §141.82(c)(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;

(iii) A report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and

(iv) The results of tap water samples collected in accordance with §141.86 at least once every six months for one year after corrosion control has been installed.

(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with §141.86 and source water monitoring conducted in accordance with §141.88 that demonstrates for two consecutive ~~six~~ 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration~~,~~ is less than the Practical Quantitation Level for lead specified in §141.89(a)(1)(ii).

(i) Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

(ii) Any water system deemed to have optimized corrosion control in accordance with this paragraph shall continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in §141.86(c) and collecting the samples at times and locations specified in §141.86(d)(4)(iv). Any such system that has not conducted a round of monitoring pursuant to §141.86(d) since September 30, 1997, shall complete a round of monitoring pursuant to this paragraph no later than September 30, 2000.

(iii) Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to §141.90(a)(3) of any change in treatment or the addition of a new

source. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

(iv) As of July 12, 2001, a system is not deemed to have optimized corrosion control under this paragraph, and shall implement corrosion control treatment pursuant to paragraph (b)(3)(v) of this section unless it meets the copper action level.

(v) Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this paragraph shall implement corrosion control treatment in accordance with the deadlines in paragraph (e) of this section. Any such large system shall adhere to the schedule specified in that paragraph for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control under this paragraph.

(c) Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two consecutive monitoring periods conducted pursuant to §141.86 and submits the results to the State. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system (or the State, as the case may be) shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The State may require a system to repeat treatment steps previously completed by the system where the State determines that this is necessary to implement properly the treatment requirements of this section. The State shall notify the system in writing of such a determination and explain the basis for its decision. The requirement for any small- or medium-size system to implement corrosion control treatment steps in accordance with paragraph (e) of this section (including systems deemed to have optimized corrosion control under paragraph (b)(1) of this section) is triggered whenever any small- or medium-size system exceeds the lead or copper action level.

(d) *Treatment steps and deadlines for large systems*. Except as provided in paragraph (b)(2) and (3) of this section, large systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§141.82, 141.86, and 141.87) by the indicated dates.

(1) *Step 1:* The system shall conduct initial monitoring (§141.86(d)(1) and §141.87(b)) during two consecutive six-month monitoring periods by January 1, 1993.

(2) *Step 2:* The system shall complete corrosion control studies (§141.82(c)) by July 1, 1994.

(3) *Step 3:* The State shall designate optimal corrosion control treatment (§141.82(d)) by January 1, 1995.

(4) *Step 4:* The system shall install optimal corrosion control treatment (§141.82(e)) by January 1, 1997.

(5) *Step 5:* The system shall complete follow-up sampling (§141.86(d)(2) and §141.87(c)) by January 1, l998.

(6) *Step 6:* The State shall review installation of treatment and designate optimal water quality control parameters (§141.82(f)) by July 1, 1998.

(7) *Step 7:* The system shall operate in compliance with the State-specified optimal water quality control parameters (§141.82(g)) and continue to conduct tap sampling (§141.86(d)(3) and §141.87(d)).

(e) *Treatment Steps and deadlines for small and medium-size systems*. Except as provided in paragraph (b) of this section, small and medium-size systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§141.82, 141.86 and 141.87) by the indicated time periods.

(1) *Step 1:* The system shall conduct initial tap sampling (§141.86(d)(1) and §141.87(b)) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under §141.86(d)(4). A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment (§141.82(a)) within six months after it exceeds one of the action levels.

(2) *Step 2:* Within 12 months after a system exceeds the lead or copper action level, the State may require the system to perform corrosion control studies (§141.82(b)). If the State does not require the system to perform such studies, the State shall specify optimal corrosion control treatment (§141.82(d)) within the following timeframes:

(i) For medium-size systems, within 18 months after such system exceeds the lead or copper action level,

(ii) For small systems, within 24 months after such system exceeds the lead or copper action level.

(3) *Step 3:* If the State requires a system to perform corrosion control studies under step 2, the system shall complete the studies (§141.82(c)) within 18 months after the State requires that such studies be conducted.

(4) *Step 4:* If the system has performed corrosion control studies under step 2, the State shall designate optimal corrosion control treatment (§141.82(d)) within 6 months after completion of step 3.

(5) *Step 5:* The system shall install optimal corrosion control treatment (§141.82(e)) within 24 months after the State designates such treatment.

(6) *Step 6:* The system shall complete follow-up sampling (§141.86(d)(2) and §141.87(c)) within 36 months after the State designates optimal corrosion control treatment.

(7) *Step 7:* The State shall review the system's installation of treatment and designate optimal water quality control parameters (§141.82(f)) within 6 months after completion of step 6.

(8) *Step 8:* The system shall operate in compliance with the State-designated optimal water quality control parameters (§141.82(g)) and continue to conduct tap sampling (§141.86(d)(3) and §141.87(d)).

**§141.82 Description of corrosion control treatment requirements.**

Each system shall complete the corrosion control treatment requirements described below which are applicable to such system under §141.81.

(a) *System recommendation regarding corrosion control treatment*. Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in paragraph (c)(1) of this section which the system believes constitutes optimal corrosion control for that system. The State may require the system to conduct additional water quality parameter monitoring in accordance with §141.87(b) to assist the State in reviewing the system's recommendation.

(b) *State decision to require studies of corrosion control treatment (applicable to small and medium-size systems)*. The State may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under paragraph (c) of this section to identify optimal corrosion control treatment for the system.

(c) *Performance of corrosion control studies*. (1) Any public water system performing corrosion control studies shall evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system:

(i) Alkalinity and pH adjustment;

(ii) Calcium hardness adjustment; and

(iii) The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

(3) The water system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above:

(i) Lead;

(ii) Copper;

(iii) pH;

(iv) Alkalinity;

(v) Calcium;

(vi) Conductivity;

(vii) Orthophosphate (when an inhibitor containing a phosphate compound is used);

(viii) Silicate (when an inhibitor containing a silicate compound is used);

(ix) Water temperature.

(4) The water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

(i) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or

(ii) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system shall provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (c)(1) through (5) of this section.

(d) *State designation of optimal corrosion control treatment*. (1) Based upon consideration of available information including, where applicable, studies performed under paragraph (c) of this section and a system's recommended treatment alternative, the State shall either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(1) of this section. When designating optimal treatment the State shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

(2) The State shall notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the State requests additional information to aid its review, the water system shall provide the information.

(e) *Installation of optimal corrosion control*. Each system shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated by the State under paragraph (d) of this section.

(f) *State review of treatment and specification of optimal water quality control parameters*. The State shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by the State in paragraph (d) of this section. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the State shall designate:

(1) A minimum value or a range of values for pH measured at each entry point to the distribution system;

(2) A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the State determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the State determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

(4) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

(5) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that the State determines to reflect optimal corrosion control treatment for the system. The State may designate values for additional water quality control parameters determined by the State to reflect optimal corrosion control for the system. The State shall notify the system in writing of these determinations and explain the basis for its decisions.

(g) *Continued operation and monitoring*. ~~All systems shall maintain water quality parameter values at or above minimum values or within ranges designated by the State under paragraph (f) of this section in each sample collected under §141.87(d). If the water quality parameter value of any sample is below the minimum value or outside the range designated by the State, then the system is out of compliance with this paragraph. As specified in §141.87(d), the system may take a confirmation sample for any water quality parameter value no later than 3 days after the first sample. If a confirmation sample is taken, the result must be averaged with the first sampling result and the average must be used for any compliance determinations under this paragraph~~. All systems optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the State under paragraph (f) of this section, in accordance with this paragraph for all samples collected under §§141.87(d)-(f). Compliance with the requirements of this paragraph shall be determined every six months, as specified under §141.87(d). A water system is out of compliance with the requirements of this paragraph for a six-month period if it has excursions for any State-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the State. Daily values are calculated as follows. States have discretion to delete results of obvious sampling errors from this calculation.

(1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both. If EPA has approved an alternative formula under §142.16 of this chapter in the State's application for a program revision submitted pursuant to §142.12 of this chapter, the State's formula shall be used to aggregate multiple measurements taken at a sampling point for the water quality parameter in lieu of the formula in this

paragraph.

(2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

(3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

(h) *Modification of State treatment decisions*. Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the optimal corrosion control treatment under paragraph (d) of this section or optimal water quality control parameters under paragraph (f) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

(i) *Treatment decisions by EPA in lieu of the State*. Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (d), (f), or (h) of this section and issue federal treatment determinations consistent with the requirements of those paragraphs where the Regional Administrator finds that:

(1) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.81,

(2) A State has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(3) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

**§141.83 Source water treatment requirements.**

Systems shall complete the applicable source water monitoring and treatment requirements (described in the referenced portions of paragraph (b) of this section, and in §§141.86, and 141.88) by the following deadlines.

(a) *Deadlines for completing source water treatment steps*--(1) *Step 1:* A system exceeding the lead or copper action level shall complete lead and copper source water monitoring (§141.88(b)) and make a treatment recommendation to the State (§141.83(b)(1)) within 6 months after exceeding the lead or copper action level.

(2) *Step 2:* The State shall make a determination regarding source water treatment (§141.83(b)(2)) within 6 months after submission of monitoring results under step 1.

(3) *Step 3:* If the State requires installation of source water treatment, the system shall install the treatment (§141.83(b)(3)) within 24 months after completion of step 2.

(4) *Step 4:* The system shall complete follow-up tap water monitoring (§ 141.86(d)(2) and source water monitoring (§141.88(c)) within 36 months after completion of step 2.

(5) *Step 5:* The State shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels (§141.83(b)(4)) within 6 months after completion of step 4.

(6) *Step 6:* The system shall operate in compliance with the State-specified maximum permissible lead and copper source water levels (§141.83(b)(4)) and continue source water monitoring (§141.88(d)).

(b) *Description of source water treatment requirements*--(1) *System treatment recommendation*. Any system which exceeds the lead or copper action level shall recommend in writing to the State the installation and operation of one of the source water treatments listed in paragraph (b)(2) of this section. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(2) *State determination regarding source water treatment*. The State shall complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the State determines that treatment is needed, the State shall either require installation and operation of the source water treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: Ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the State requests additional information to aid in its review, the water system shall provide the information by the date specified by the State in its request. The State shall notify the system in writing of its determination and set forth the basis for its decision.

(3) *Installation of source water treatment*. Each system shall properly install and operate the source water treatment designated by the State under paragraph (b)(2) of this section.

(4) *State review of source water treatment and specification of maximum permissible source water levels*. The State shall review the source water samples taken by the water system both before and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by the State. Based upon its review, the State shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The State shall notify the system in writing and explain the basis for its decision.

(5) *Continued operation and maintenance*. Each water system shall maintain lead and copper levels below the maximum permissible concentrations designated by the State at each sampling point monitored in accordance with §141.88. The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the State.

(6) *Modification of State treatment decisions*. Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the source water treatment under paragraph (b)(2) of this section, or maximum permissible lead and copper concentrations for finished

water entering the distribution system under paragraph (b)(4) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

(7) *Treatment decisions by EPA in lieu of the State*. Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (b) (2), (4), or (6) of this section and issue Federal treatment determinations consistent with the requirements of those paragraphs where the Administrator finds that:

(i) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.83(a),

(ii) A state has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(iii) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

**§141.84 Lead service line replacement requirements.**

(a) Systems that fail to meet the lead action level in tap samples taken pursuant to §141.86(d)(2), after installing corrosion control and/or source water treatment (whichever sampling occurs later), shall replace lead service lines in accordance with the requirements of this section. If a system is in violation of §141.81 or §141.83 for failure to install source water or corrosion control treatment, the State may require the system to commence lead service line replacement under this section after the date by which the system was required to conduct monitoring under §141.86(d)(2) has passed.

(b) A water system shall replace annually at least 7 percent of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the system, based ~~upon~~ on a materials evaluation, including the evaluation required under §141.86(a) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the system. The first year of lead service line replacement shall begin on the date the action level was exceeded in tap sampling referenced in paragraph (a) of this section.

(c) A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L.

(d) ~~A water system shall replace the entire service line (up to the building inlet) unless it demonstrates to the satisfaction of the State under paragraph (e) of this section that it controls less than the entire service line. In such cases, the system shall replace the portion of the line which the State determines is under the system's control. The system shall notify the user served by the line that the system will replace~~

~~the portion of the service line under its control and shall offer to replace the building owner's portion of the line, but is not required to bear the cost of replacing the building owner's portion of the line. For buildings where only a portion of the lead service line is replaced, the water system shall inform the resident(s) that the system will collect a first flush tap water sample after partial replacement of the service line is completed if the resident(s) so desire. In cases where the resident(s) accept the offer, the system shall collect the sample and report the results to the resident(s) within 14 days following partial lead service line replacement.~~ A water system shall replace that portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner's authorized agent, that the system will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local or common law. A water system that does not replace the entire length of the service line also shall complete the following tasks.

(1) At least 45 days prior to commencing with the partial replacement of a lead service line, the water system shall provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The State may allow the water system to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the system will, at the system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under §141.86(b)(3), within 72 hours after the completion of the partial replacement of the service line. The system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered "on time."

(2) The water system shall provide the information required by paragraph (d)(1) of this section to the residents of individual dwellings by mail or by other methods approved by the State. In instances where multi-family dwellings are served by the line, the water system shall have the option to post the information at a conspicuous location.

~~(e) A water system is presumed to control the entire lead service line (up to the building inlet) unless the system demonstrates to the satisfaction of the State, in a letter submitted under §141.90(e)(4), that it does not have any of the following forms of control over the entire line (as defined by state statutes, municipal ordinances, public service contracts or other applicable legal authority): authority to set standards for construction, repair, or maintenance of the line, authority to replace, repair, or maintain the service line, or ownership of the service line. The State shall review the information supplied by the system and determine whether the system controls less than the entire service line and, in such cases, shall determine the extent of the system's control. The State's determination shall be in writing and explain the basis for its decision.~~

~~(f)~~(e) The State shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The State shall make this determination in writing and notify the system of its finding within 6 months after the system is triggered into lead service line replacement based

on monitoring referenced in paragraph (a) of this section.

~~(g)~~(f) Any system may cease replacing lead service lines whenever first draw samples collected pursuant to §141.86(b)(2) meet the lead action level during each of two consecutive monitoring periods and the system submits the results to the State. If first draw tap samples collected in any such system thereafter exceeds the lead action level, the system shall recommence replacing lead service lines pursuant to paragraph (b) of this section.

~~(h)~~(g) To demonstrate compliance with paragraphs (a) through (d) of this section, a system shall report to the State the information specified in §141.90(e).

**§141.85 Public education and supplemental monitoring requirements.**

A water system that exceeds the lead action level based on tap water samples collected in accordance with §141.86 shall deliver the public education materials contained in paragraphs (a) and (b) of this section in accordance with the requirements in paragraph (c) of this section.

(a) *Content of written public education materials*. (1) *Community water systems*. A community water system shall include the following text in all of the printed materials it distributes through its lead public education program. Systems may delete information pertaining to lead service lines, upon approval by the State, if no lead service lines exist anywhere in the water system service area. Public education language at paragraphs (a)(1)(iv)(B)(*5*) and (a)(1)(iv)(D)(*2*) of this section may be modified regarding building permit record availability and consumer access to these records, if approved by the State. Systems may also continue to utilize pre-printed materials that meet the public education language requirements in 40 CFR 141.85, effective November 6, 1991 and contained in 40 CFR, Parts 100 - 149 additionally revised as of July 1, 1991. Any additional information presented by a system shall be consistent with the information below and be in plain English that can be understood by ~~laypersons~~ lay people.

~~(1)~~(i) *Introduction*. The United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we ~~control~~ own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

~~(2)~~(ii) *Health effects of lead*. Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources

of lead contamination--like dirt and dust--that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

~~(3)~~(iii) *Lead in drinking water*. ~~(i)~~(A) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

~~(ii)~~(B) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

~~(iii)~~(C) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

~~(4)~~(iv) *Steps you can take in the home to reduce exposure to lead in drinking water*. ~~(i)~~(A) Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].

~~(ii)~~(B) If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

~~(A)~~(*1*) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than [insert a cost estimate based on flushing two times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

~~(B)~~(*2*) Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the

stove.

~~(C)~~(*3*) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

~~(D)~~(*4*) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify your State [insert name of department responsible for enforcing the Safe Drinking Water Act in your State] about the violation.

~~(E)~~(*5*) Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if your ~~homes's~~ home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially ~~controlled~~ owned by the [insert the name of the city, county, or water system that ~~controls~~ owns the line], we are required to provide ~~you~~ the owner of the privately-owned portion of the line with information on how to replace ~~your~~ the privately-owned portion of the service line, and offer to replace that portion of the line at ~~your~~ the owner's expense ~~and take a follow-up tap water sample within 14 days of the replacement~~. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

~~(F)~~(*6*) Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

~~(iii)~~(C) The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

~~(A)~~(*1*) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters *may* reduce lead levels at the tap,

however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

~~(B)~~(*2*) Purchase bottled water for drinking and cooking.

~~(iv)~~(D) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

~~(A)~~(*1*) [insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;

~~(B)~~(*2*) [insert the name of city or county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

~~(C)~~(*3*) [insert the name of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.

~~(v)~~(E) The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least two laboratories].

(2) *Non-transient non-community water systems*. A non-transient non-community water system shall either include the text specified in paragraph (a)(1) of this section or shall include the following text in all of the printed materials it distributes through its lead public education program. Water systems may delete information pertaining to lead service lines upon approval by the State if no lead service lines exist anywhere in the water system service area. Any additional information presented by a system shall be consistent with the information below and be in plain English that can be understood by lay people.

(i) *Introduction.* The United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect yourself by reducing your exposure to lead in drinking water.

(ii) *Health effects of lead.* Lead is found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of

growing bodies. In addition, a child at play often comes into contact with sources of lead contamination - like dirt and dust - that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(iii) *Lead in drinking water.* (A) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

(B) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to water mains (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

(C) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.

(iv) *Steps you can take to reduce exposure to lead in drinking water.* (A) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet for about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than one gallon of water.

(B) Do not cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and then heat it.

(C) The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.

(D) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(*1*) [insert the name or title of facility official if appropriate] at [insert phone number] can provide you with information about your facility's water supply; and

(*2*) [insert the name or title of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead.

(b) *Content of broadcast materials.* A water system shall include the following information in all public service announcements submitted under its lead public education program to television and radio

stations for broadcasting:

(1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for [insert free or $ per sample]. You can contact the [insert the name of the city or water system] for information on testing and on simple ways to reduce your exposure to lead in drinking water.

(2) To have your water tested for lead, or to get more information about this public health concern, please call [insert the phone number of the city or water system].

(c) *Delivery of a public education program.* (1) In communities where a significant proportion of the population speaks a language other than English, public education materials shall be communicated in the appropriate language(s).

(2) A community water system that ~~fails to meet~~ exceeds the lead action level on the basis of tap water samples collected in accordance with §141.86, and that is not already repeating public education tasks pursuant to paragraph (c)(3), (c)(7), or (c)(8), of this section, shall, within 60 days:

(i) Insert notices in each customer's water utility bill containing the information in paragraph (a)(1) of this section, along with the following alert on the water bill itself in large print: "SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION." A community water system having a billing cycle that does not include a billing within 60 days of exceeding the action level, or that cannot insert information in the water utility bill without making major changes to its billing system, may use a separate mailing to deliver the information in paragraph (a)(1) of this section as long as the information is delivered to each customer within 60 days of exceeding the action level. Such water systems shall also include the "alert" language specified in this paragraph.

(ii) Submit the information in paragraph (a)(1) of this section to the editorial departments of the major daily and weekly newspapers circulated throughout the community.

(iii) Deliver pamphlets and/or brochures that contain the public education materials in paragraphs ~~(a)(2) and (4)~~ (a)(1)(ii) and (a)(1)(iv) of this section to facilities and organizations, including the following:

(A) Public schools and/or local school boards;

(B) City or county health department;

(C) Women, Infants, and Children and/or Head Start Program(s) whenever available;

(D) Public and private hospitals and/or clinics;

(E) Pediatricians;

(F) Family planning clinics; and

(G) Local welfare agencies.

(iv) Submit the public service announcement in paragraph (b) of this section to at least five of the radio and television stations with the largest audiences that broadcast to the community served by the water system.

(3) A community water system shall repeat the tasks contained in paragraphs (c)(2) (i), (ii) and (iii) of this section every 12 months, and the tasks contained in paragraphs (c)(2)(iv) of this section every 6 months for as long as the system exceeds the lead action level.

(4) Within 60 days after it exceeds the lead action level (unless it already is repeating public education tasks pursuant to paragraph (c)(5) of this section), a non-transient non-community water system shall deliver the public education materials ~~contained in~~ specified by paragraph~~s~~ (a)(1)~~, (2), and (4)~~ of this section or the public education materials specified by paragraph (a)(2) of this section as follows:

(i) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

(ii) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The State may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

(5) A non-transient non-community water system shall repeat the tasks contained in paragraph (c)(4) of this section at least once during each calendar year in which the system exceeds the lead action level.

(6) A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period conducted pursuant to § 141.86. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any monitoring period.

(7) A community water system may apply to the State, in writing, (unless the State has waived the requirement for prior State approval) to use the text specified in paragraph (a)(2) of this section in lieu of the text in paragraph (a)(1) of this section and to perform the tasks listed in paragraphs (c)(4) and (c)(5) of this section in lieu of the tasks in paragraphs (c)(2) and (c)(3) of this section if:

(i) The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

(ii) The system provides water as part of the cost of services provided and does not separately charge for water consumption.

(8)(i) A community water system serving 3,300 or fewer people may omit the task contained in paragraph (c)(2)(iv) of this section. As long as it distributes notices containing the information contained in paragraph (a)(1) of this section to every household served by the system, such systems may further limit their public education programs as follows:

(A) Systems serving 500 or fewer people may forego the task contained in paragraph (c)(2)(ii) of this section. Such a system may limit the distribution of the public education materials required under paragraph (c)(2)(iii) of this section to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children, unless it is notified by the State in writing that it must make a broader distribution.

(B) If approved by the State in writing, a system serving 501 to 3,300 people may omit the task in paragraph (c)(2)(ii) of this section and/or limit the distribution of the public education materials required under paragraph (c)(2)(iii) of this section to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

(ii) A community water system serving 3,300 or fewer people that delivers public education in accordance with paragraph (c)(8)(i) of this section shall repeat the required public education tasks at least once during each calendar year in which the system exceeds the lead action level.

(d) *Supplemental monitoring and notification of results*. A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with §141.86 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

**§141.86 Monitoring requirements for lead and copper in tap water.**

(a) *Sample site location*. (1) By the applicable date for commencement of monitoring under paragraph (d)(1) of this section, each water system shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. All sites from which first draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

(2) A water system shall use the information on lead, copper, and galvanized steel that it is required to collect under §141.42(d) of this part [special monitoring for corrosivity characteristics] when conducting a materials evaluation. When an evaluation of the information collected pursuant to §141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in paragraph (a) of this section, the water system shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities):

(i) All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;

(ii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and

(iii) All existing water quality information, which includes the results of all prior analyses of the

system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

(3) The sampling sites selected for a community water system's sampling pool ("tier l sampling sites") shall consist of single family structures that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line. When multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

(4) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with "tier 2 sampling sites", consisting of buildings, including multiple-family residences that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line.

(5) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with "tier 3 sampling sites", consisting of single family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For the purpose 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.

(6) The sampling sites selected for a non-transient noncommunity water system ("tier l sampling sites") shall consist of buildings that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line.

(7) A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (a)(6) of this section shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the non-transient non-community water system shall use representative sites throughout the distribution system. For the purpose 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.

~~(8) Any water system whose sampling pool does not consist exclusively of tier 1 sites shall demonstrate in a letter submitted to the State under §141.90(a)(2) why a review of the information listed in paragraph (a)(2) of this section was inadequate to locate a sufficient number of tier l sites. Any community water system which includes tier 3 sampling sites in its sampling pool shall demonstrate in such a letter why it was unable to locate a sufficient number of tier l and tier 2 sampling sites.~~

~~(9)~~(8) Any water system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes

with lead solder, and 50 percent of the samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line ~~shall demonstrate in a letter submitted to the State under §141.90(a)(4) why the system was unable to locate a sufficient number of such sites. Such a water system~~ shall collect first draw samples from all of the sites identified as being served by such lines.

(b) *Sample collection methods*. (1) All tap samples for lead and copper collected in accordance with this subpart, with the exception of lead service line samples collected under §141.84(c) and samples collected under paragraph (b)(5) of this section, shall be first draw samples.

(2) Each first draw tap sample for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First draw 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 one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. Non-first-draw samples collected in lieu of first-draw samples pursuant to paragraph (b)(5) of this section shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First draw samples may be collected by the system or the system may allow residents to collect first draw samples after instructing the residents of the sampling procedures specified in this paragraph. To avoid problems of residents handling nitric acid, acidification of first draw samples may be done up to 14 days after the sample is collected. ~~If the sample is not acidified immediately after collection, then the sample must stand in the original container for at least 28 hours after acidification.~~ After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(3) Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours. Lead service line samples shall be collected in one of the following three ways:

(i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;

(ii) Tapping directly into the lead service line; or

(iii) If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

(4) A water system shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

(5) A non-transient non-community water system, or a community water system that meets the criteria of §§141.85(c)(7)(i) and (ii), that does not have enough taps that can supply first-draw samples, as defined in

§141.2, may apply to the State in writing to substitute non-first-draw samples. Such systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The State has the discretion to waive the requirement for prior State approval of non-first-draw sample sites selected by the system, either through State regulation or written notification to the system.

(c) *Number of samples*. Water systems shall collect at least one sample during each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column ~~below~~ ("standard monitoring") of the table in this paragraph. A system conducting reduced monitoring under paragraph (d)(4) of this section ~~may~~ shall collect at least one sample from the number of sites specified in the second column ~~below~~ ("reduced monitoring") of the table in this paragraph during each monitoring period specified in paragraph (d)(4) of this section. Such reduced monitoring sites shall be representative of the sites required for standard monitoring. States may specify sampling locations when a system is conducting reduced monitoring. The table is as follows:

| System size (~~No.~~ number of people served) | ~~No.~~ Number of sites (standard monitoring) | ~~No.~~ Number of sites (reduced monitoring) |
|---|---|---|
| >100,000 | 100 | 50 |
| 10,001 - to 100,000 | 60 | 30 |
| 3,301 - to 10,000 | 40 | 20 |
| 501 - to 3,300 | 20 | 10 |
| 101 to 500 | 10 | 5 |
| ≤100 | 5 | 5 |

(d) *Timing of monitoring*--(1) *Initial tap sampling.*

The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

| **System size (No. people served)** | **First six-month monitoring period begins on** |
|---|---|
| >50,000 | January 1, 1992. |
| 3,301 to 50,000 | July 1, 1992. |
| ≤3,300 | July 1, 1993. |

(i) All large systems shall monitor during two consecutive six-month periods.

(ii) All small and medium-size systems shall monitor during each six-month monitoring period until:

(A) The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under §141.81, in which case the system shall continue monitoring in accordance with paragraph (d)(2) of this section, or

(B) The system meets the lead and copper action levels during two consecutive six-month monitoring periods, in which case the system may reduce monitoring in accordance with paragraph (d)(4) of this section.

(2) *Monitoring after installation of corrosion control and source water treatment*. (i) Any large system which installs optimal corrosion control treatment pursuant to §141.81(d)(4) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.81(d)(5).

(ii) Any small or medium-size system which installs optimal corrosion control treatment pursuant to §141.81(e)(5) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.81(e)(6).

(iii) Any system which installs source water treatment pursuant to §141.83(a)(3) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.83(a)(4).

(3) *Monitoring after State specifies water quality parameter values for optimal corrosion control*. After the State specifies the values for water quality control parameters under §141.82(f), the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date the State specifies the optimal values under §141.82(f).

(4) *Reduced monitoring*. (i) A small or medium-size water system that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with paragraph (c) of this section, and reduce the frequency of sampling to once per year.

(ii) Any water system that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during each of two consecutive six-month monitoring periods may ~~request that the State allow the system to~~ reduce the frequency of monitoring to once per year and ~~to~~ reduce the number of lead and copper samples in accordance with paragraph (c) of this section if it receives written approval from the State. The State shall review ~~the~~ monitoring, treatment, and other relevant information submitted by the water system in accordance with §141.90, and shall ~~make its decision~~ notify the system in writing~~, setting forth the basis for its determination~~ when it determines the system is eligible to commence reduced monitoring pursuant to this paragraph. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iii) A small or medium-size water system that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years. Any water system that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may ~~request that the State allow the system to~~ reduce the frequency of monitoring from annually to once every three years if it receives written approval from the State. The State shall review ~~the~~ monitoring, treatment, and other relevant information submitted by the water system in

accordance with §141.90, and shall ~~make its decision~~ notify the system in writing~~, setting forth the basis for its determination~~ when it determines the system is eligible to reduce the frequency of monitoring to once every three years. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iv) A water system that reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in paragraph (a) of this section. Systems sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August or September unless the State has approved a different sampling period in accordance with paragraph (d)(4)(iv)(A) of this section.

(A) The State, at its discretion, may approve a different period for conducting the lead and copper tap sampling for systems collecting a reduced number of samples. Such a period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a non-transient non-community water system that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the State shall designate a period that represents a time of normal operation for the system.

(B) Systems monitoring annually, that have been collecting samples during the months of June through September and that receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Systems monitoring triennially that have been collecting samples during the months of June through September, and receive State approval to alter the sampling collection period as per paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or triennially, as required by this section. Small systems with waivers, granted pursuant to paragraph (g) of this section, that have been collecting samples during the months of June through September and choose to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section must collect their next round of samples before the end of the 9-year period.

(v) Any water system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level computed under §141.80(c)(3) is less than or equal to 0.005 mg/L and the tap water copper level computed under §141.80(c)(3) is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with paragraph (c) of this section and reduce the frequency of sampling to once every three calendar years.

~~(v)~~(vi)(A) A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph ~~(d)~~(c) of this section. Such a system shall also conduct water quality parameter monitoring in accordance with §141.87(b), (c) or (d) (as appropriate) during the monitoring period in which it exceeded the action level. ~~Any water system subject to the reduced monitoring frequency that fails to operate within the range of values for the water quality parameters specified by the State under §141.82(f) shall resume tap water sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section.~~ Any such system may resume annual monitoring for lead and copper at the tap

at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(i) of this section and/or may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section.

(B) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State under §141.82(f) for more than nine days in any six-month period specified in §141.87(d) shall conduct tap water sampling for lead and copper at the frequency specified in paragraph (d)(3) of this section, collect the number of samples specified for standard monitoring under paragraph (c) of this section, and shall resume monitoring for water quality parameters within the distribution system in accordance with §141.87(d). Such a system may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

(*1*) The system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(ii) of this section and the system has received written approval from the State that it is appropriate to resume reduced monitoring on an annual frequency.

(*2*) The system may resume triennial monitoring for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section and the system has received written approval from the State that it is appropriate to resume triennial monitoring.

(*3*) The system may reduce the number of water quality parameter tap water samples required in accordance with §141.87(e)(1) and the frequency with which it collects such samples in accordance with §141.87(e)(2). Such a system may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, in accordance with the requirements of §141.87(e)(2), that it has re-qualified for triennial monitoring.

(vii) Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section that either adds a new source of water or changes any water treatment shall inform the State in writing in accordance with §141.90(a)(3). The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

(e) *Additional monitoring by systems.* The results of any 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.

(f) *Invalidation of lead or copper tap water samples.* A sample invalidated under this paragraph does not count toward determining lead or copper 90th percentile levels under §141.80(c)(3) or toward meeting the minimum monitoring requirements of paragraph (c) of this section.

(1) The State may invalidate a lead or copper tap water sample at least if one of the following conditions is met.

(i) The laboratory establishes that improper sample analysis caused erroneous results.

(ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.

(iii) The sample container was damaged in transit.

(iv) There is substantial reason to believe that the sample was subject to tampering.

(2) The system must report the results of all samples to the State and all supporting documentation for samples the system believes should be invalidated.

(3) To invalidate a sample under paragraph (f)(l) of this section, the decision and the rationale for the decision must be documented in writing. 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.

(4) The water system must collect replacement samples for any samples invalidated under this section if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of paragraph (c) of this section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the State invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(g) *Monitoring waivers for small systems*. Any small system that meets the criteria of this paragraph may apply to the State to reduce the frequency of monitoring for lead and copper under this section to once every nine years (i.e., a "full waiver") if it meets all of the materials criteria specified in paragraph (g)(1) of this section and all of the monitoring criteria specified in paragraph (g)(2) of this section. If State regulations permit, any small system that meets the criteria in paragraphs (g)(1) and (2) of this section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (i.e., a "partial waiver").

(1) *Materials criteria*. The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined in this paragraph, as follows:

(i) *Lead*. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (i.e., a "lead waiver"), the water system must provide certification and supporting documentation to the State that the system is free of all lead-containing materials, as follows:

(A) It contains no plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers; and

(B) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300g-6(e) (SDWA section 1417(e)).

(ii) *Copper*. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (i.e., a "copper waiver"), the water system must provide certification and supporting documentation to the State that the system contains no copper pipes or copper service lines.

(2) *Monitoring criteria for waiver issuance*. The system must have completed at least one 6-month round of standard tap water monitoring for lead and copper at sites approved by the State and from the number of sites required by paragraph (c) of this section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

(i) *Lead levels*. To qualify for a full waiver, or a lead waiver, the system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

(ii) *Copper levels*. To qualify for a full waiver, or a copper waiver, the system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

(3) *State approval of waiver application*. The State shall notify the system of its waiver determination, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the State may require the system to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system must continue monitoring for lead and copper at the tap as required by paragraphs (d)(1) through (d)(4) of this section, as appropriate, until it receives written notification from the State that the waiver has been approved.

(4) *Monitoring frequency for systems with waivers*. (i) A system with a full waiver must conduct tap water monitoring for lead and copper in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites identified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section for both lead and copper to the State along with the monitoring results.

(ii) A system with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites specified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section pertaining to the waived contaminant along with the monitoring results. Such a system also must continue to monitor for the non-waived contaminant in accordance with requirements of paragraph (d)(1) through (d)(4) of this section, as appropriate.

(iii) If a system with a full or partial waiver adds a new source of water or changes any water treatment, the system must notify the State in writing in accordance with §141.90(a)(3). The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

(iv) If a system with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (e.g., as a result of new construction or repairs), the system shall notify the State in writing no later than 60 days after becoming aware of such a change.

(5) *Continued eligibility*. If the system continues to satisfy the requirements of paragraph (g)(4) of this section, the waiver will be renewed automatically, unless any of the conditions listed in paragraph (g)(5)(i) through (g)(5)(iii) of this section occurs. A system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of paragraphs (g)(1) and (g)(2) of this section.

(i) A system with a full waiver or a lead waiver no longer satisfies the materials criteria of paragraph (g)(1)(i) of this section or has a 90th percentile lead level greater than 0.005 mg/L.

(ii) A system with a full waiver or a copper waiver no longer satisfies the materials criteria of paragraph (g)(1)(ii) of this section or has a 90th percentile copper level greater than 0.65 mg/L.

(iii) The State notifies the system, in writing, that the waiver has been revoked, setting forth the basis of its decision.

(6) *Requirements following waiver revocation*. A system whose full or partial waiver has been revoked by the State is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

(i) If the system exceeds the lead and/or copper action level, the system must implement corrosion control treatment in accordance with the deadlines specified in §141.81(e), and any other applicable requirements of this subpart.

(ii) If the system meets both the lead and the copper action level, the system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in paragraph (c) of this section.

(7) *Pre-existing waivers*. Small system waivers approved by the State in writing prior to April 11, 2000 shall remain in effect under the following conditions:

(i) If the system has demonstrated that it is both free of lead-containing and copper-containing materials, as required by paragraph (g)(1) of this section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of paragraph (g)(2) of this section, the waiver remains in effect so long as the system continues to meet the waiver eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the last time the system has monitored for lead and copper at the tap.

(ii) If the system has met the materials criteria of paragraph (g)(1) of this section but has not met the monitoring criteria of paragraph (g)(2) of this section, the system shall conduct a round of monitoring for lead and copper at the tap demonstrating that it meets the criteria of paragraph (g)(2) of this section no later than September 30, 2000. Thereafter, the waiver shall remain in effect as long as the system meets the continued eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the round of monitoring conducted pursuant to paragraph (g)(2) of this section.

**§141.87 Monitoring requirements for water quality parameters.**

All large water systems, and all small- and medium-size systems that exceed the lead or copper

action level shall monitor water quality parameters in addition to lead and copper in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

(a) *General requirements* -- (1) *Sample collection methods*. (i) Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under §141.86(a). [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling under 40 CFR 141.21.]

(ii) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

(2) *Number of samples*. (i) Systems shall collect two tap samples for applicable water quality parameters during each monitoring period specified under paragraphs (b) through (e) of this section from the following number of sites.

| **System size (No. people served)** | **No. of sites for water quality parameters** |
|---|---|
| >100,000 | 25 |
| 10,001-100,000 | 10 |
| 3,301 to 10,000 | 3 |
| 501 to 3,300 | 2 |
| 101 to 500 | 1 |
| ≤100 | 1 |

(ii) Except as provided in paragraph (c)(3) of this section, ~~Systems~~ systems shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in paragraph (b) of this section. During each monitoring period specified in paragraphs (c)-(e) of this section, systems shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

(b) *Initial sampling* All large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in §141.86(d)(1). All small and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each six-month monitoring period specified in §141.86(d)(1) during which the system exceeds the lead or copper action level.

(1) At taps:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium;

(vi) Conductivity; and

(vii) Water temperature.

(2) At each entry point to the distribution system: all of the applicable parameters listed in paragraph (b)(1) of this section.

(c) *Monitoring after installation of corrosion control*. Any large system which installs optimal corrosion control treatment pursuant to §141.81(d)(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in §141.86(d)(2)(i). Any small or medium-size system which installs optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in §141.86(d)(2)(ii) in which the system exceeds the lead or copper action level.

(1) At taps, two samples for:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

(2) Except as provided in paragraph (c)(3) of this section, ~~At~~ at each entry point to the distribution system, at least one sample no less frequently than every two weeks (biweekly) for:

(i) pH;

(ii) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

(iii) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

(3) Any ground water system can limit entry point sampling described in paragraph (c)(2) of this section to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources,

the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this paragraph, the system shall provide to the State written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(d) *Monitoring after State specifies water quality parameter values for optimal corrosion control.* After the State specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under §141.82(f), all large systems shall measure the applicable water quality parameters in accordance with paragraph (c) of this section ~~during each monitoring period specified in §141.86(d)(3)~~ and determine compliance with the requirements of §141.82(g) every six months with the first six-month period to begin on the date the State specifies the optimal values under §141.82(f). Any small or medium-size system shall conduct such monitoring during each ~~monitoring~~ six-month period specified in ~~§141.86(d)(3)~~ this paragraph in which the system exceeds the lead or copper action level. ~~The system may take a confirmation sample for any water quality parameter value no later than 3 days after the first sample. If a confirmation sample is taken, the result must be averaged with the first sampling result and the average must be used for any compliance determinations under §141.82(g). States have discretion to delete results of obvious sampling errors from this calculation.~~ For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to §141.86(d)(4) at the time of the action level exceedance, the end of the applicable six-month period under this paragraph shall coincide with the end of the applicable monitoring period under §141.86(d)(4). Compliance with State-designated optimal water quality parameter values shall be determined as specified under §141.82(g).

(e) *Reduced monitoring.* (1) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under paragraph (d) of this section shall continue monitoring at the entry point(s) to the distribution system as specified in paragraph (c)(2) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

| **System size (No. of people served)** | **Reduced No. of sites for water quality parameters** |
|---|---|
| >100,000 | 10 |
| 10,001 to 100,000 | 7 |
| 3,301 to 10,000 | 3 |
| 501 to 3,300 | 2 |
| 101 to 500 | 1 |
| ≤100 | 1 |

(2)(i) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in this paragraph (e)(1) of this section from every six months to annually. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion

control treatment specified by the State under §141.82(f) during three consecutive years of annual monitoring under this paragraph may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in paragraph (e)(1) from annually to every three years.

(ii) A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section to every three years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in §141.89 (a)(1)(ii), that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in §141.80(c)(2), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f).

(3) A water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

(4) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State in §141.82(f) for more than nine days in any six-month period specified in §141.82(g) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in paragraph (d) of this section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in paragraph (e)(1) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that paragraph and/or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(f) *Additional monitoring by systems*. The results of any 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., determining concentrations of water quality parameters) under this section or §141.82.

SUMMARY OF MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS[1]

| Monitoring Period | Parameters[2] | Location | Frequency |
|---|---|---|---|
| Initial Monitoring. | pH, alkalinity, orthophosphate or silica[3], calcium, conductivity, temperature. | Taps and at entry point(s) to distribution system. | Every 6 months. |
| After Installation of Corrosion Control. | pH, alkalinity, orthophosphate or silica[3], calcium[4]. | Taps. | Every 6 months. |
| | pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]. | Entry point(s) to distribution system[6]. | ~~Biweekly~~ No less frequently than every two weeks. |
| After State Specifies Parameter Values for Optimal Corrosion Control. | pH, alkalinity, orthophosphate or silica[3], calcium[4]. | Taps. | Every 6 months. |
| | pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5] | Entry point(s) to distribution system[6]. | ~~Biweekly~~ No less frequently than every two weeks. |
| Reduced Monitoring. | pH, alkalinity, orthophosphate or silica[3], calcium[4]. | Taps. | Every 6 months, annually[7] or every 3 years[8]; ~~at a~~ reduced number of sites. |
| | pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]. | Entry point(s) to distribution system[6]. | ~~Biweekly~~ No less frequently than every two weeks. |

[1]Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.

[2]Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

[3]Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.

[4]Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

[5]Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

[6]Ground water systems may limit monitoring to representative locations throughout the system.

[7]Water systems may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.

[8]Water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual monitoring. Water systems may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the State under §141.82(f) as representing optimal corrosion control during two consecutive six-month monitoring periods.

**§141.88 Monitoring requirements for lead and copper in source water.**

(a) *Sample location, collection methods, and number of samples*. (1) A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with §141.86 shall collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods: ~~specified in §141.23(a)(1)-(4) (inorganic chemical sampling). (Note: The timing of sampling for lead and copper shall be in accordance with paragraphs (b) and (c) of this section, and not dates specified in §141.23(a)(1) and (2)).~~

(i) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). The system shall take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE: For the purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(iii) If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

(iv) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:

(A) A follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or

(B) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

(2) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under §141.83(b)(4), the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a State-required confirmation sample is taken for lead or copper, then the results of the initial and

confirmation sample shall be averaged in determining compliance with the State-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

(b) *Monitoring frequency after system exceeds tap water action level*. Any system which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system within six months after the exceedance.

(c) *Monitoring frequency after installation of source water treatment*. Any system which installs source water treatment pursuant to §141.83(a)(3) shall collect an additional source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified in §141.83(a)(4).

(d) *Monitoring frequency after State specifies maximum permissible source water levels or determines that source water treatment is not needed*. (1) A system shall monitor at the frequency specified below in cases where the State specifies maximum permissible source water levels under §141.83(b)(4) or determines that the system is not required to install source water treatment under §141.83(b)(2).

(i) A water system using only groundwater shall collect samples once during the three-year compliance period (as that term is defined in §141.2) in effect when the applicable State determination under paragraph (d)(1) of this section is made. Such systems shall collect samples once during each subsequent compliance period.

(ii) A water system using surface water (or a combination of surface and groundwater) shall collect samples once during each year, the first annual monitoring period to begin on the date on which the applicable State determination is made under paragraph (d)(1) of this section.

(2) A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under paragraph (d)(1)(i) or (ii) of this section.

(e) *Reduced monitoring frequency*. (1) A water system using only ~~groundwater~~ ground water ~~which demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and/or copper concentrations specified by the State in §141.83(b)(4) during at least three consecutive compliance periods under paragraph (d)(1) of this section~~ may reduce the monitoring frequency for lead and~~/or~~ copper in source water to once during each nine-year compliance cycle (as that term is defined in §141.2) if the system meets one of the following criteria:~~.~~

(i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in §141.83(b)(4) during at least three consecutive compliance periods under paragraph (d)(1) of this section; or

(ii) The State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under paragraph (d)(1) of this section, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

(2) A water system using surface water (or a combination of surface water and ground waters) ~~which demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in §141.83(b)(4) for at least three consecutive years~~ may reduce the monitoring frequency in paragraph (d)(1) of this section to once during each nine-year compliance cycle (as that term is defined in §141.2) if the system meets one of the following criteria:~~.~~

(i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in §141.83(b)(4) for at least three consecutive years; or

(ii) The State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

(3) A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by the State in §141.83(a)(5).

**§141.89 Analytical methods.**

(a) Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted with the methods in §141.23(k)(1).

(1) Analyses under this section shall only be conducted by laboratories that have been certified by EPA or the State. To obtain certification to conduct analyses for lead and copper, laboratories must:

(i) Analyze performance evaluation samples which include lead and copper provided by EPA Environmental Monitoring and Support Laboratory or equivalent samples provided by the State; and

(ii) Achieve quantitative acceptance limits as follows:

(A) For lead: ± 30 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

(B) For Copper: ± 10 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L;

(iii) Achieve the method detection limits for lead of 0.001 mg/L according to the procedures in appendix B of part 136 of this title ~~as follows:~~. This need only be accomplished if the laboratory will be processing source water composite samples under §141.88(a)(1)(iii).

~~(A) Lead: 0.001 mg/L (only if source water compositing is done under §141.23(a)(4)); and~~

~~(B) Copper: 0.001 mg/L or 0.020 mg/L when atomic absorption direct aspiration is used (only if source water compositing is done under §141.23(a)(4)).~~

(iv) Be currently certified by EPA or the State to perform analyses to the specifications described in paragraph (a)(2) of this section.

(2) States have the authority to allow the use of previously collected monitoring data for purposes of monitoring, if the data were collected and analyzed in accordance with the requirements of this subpart.

(3) All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero.

(4) All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper MDL must be reported as zero.

(b) [Reserved]

**§141.90 Reporting requirements.**

All water systems shall report all of the following information to the State in accordance with this section.

(a) *Reporting requirements for tap water monitoring for lead and copper and for water quality parameter monitoring.* (1) Except as provided in paragraph (a)(1)(viii) of this section, ~~A~~ a water system shall report the information specified below for all tap water samples specified in §141.86 and for all water quality parameter samples specified in §141.87 within the first 10 days following the end of each applicable monitoring period specified in §141.86 and §141.87 ~~and §141.88~~ (i.e., every six months, annually, ~~or~~ every 3 years, or every 9 years)~~.~~:

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under §141.86(a) (3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool;

(ii) ~~A certification that each first draw sample collected by the water system is one-liter in volume and, to the best of their knowledge, has stood motionless in the service line, or in the interior plumbing of a sampling site, for at least six hours~~ Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to §141.86(f)(2);

(iii) ~~Where residents collected samples, a certification that each tap sample collected by the residents was taken after the water system informed them of proper sampling procedures specified in §141.86(b)(2)~~ [Reserved];

(iv) The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with §141.80(c)(3)),

unless the State calculates the system's 90th percentile lead and copper levels under paragraph (h) of this section;

(v) With the exception of initial tap sampling conducted pursuant to §141.86(d)(1), the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

(vi) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under §141.87(b)-(e);

(vii) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under §141.87(b)-(e)~~.~~;

(viii) A water system shall report the results of all water quality parameter samples collected under §141.87(c)-(f) during each six-month monitoring period specified in §141.87(d) within the first 10 days following the end of the monitoring period unless the State has specified a more frequent reporting requirement.

(2) ~~By the applicable date in §141.86(d)(1) for commencement of monitoring, each community water system which does not complete its targeted sampling pool with tier 1 sampling sites meeting the criteria in §141.86(a)(3) shall send a letter to the State justifying its selection of tier 2 and/or tier 3 sampling sites under §141.86(a)(4) and/or (a)(5).~~ For a non-transient non-community water system, or a community water system meeting the criteria of §§141.85(c)(7)(i) and (ii), that does not have enough taps that can provide first-draw samples, the system must either:

(i) Provide written documentation to the State identifying standing times and locations for enough non-first-draw samples to make up its sampling pool under §141.86(b)(5) by the start of the first applicable monitoring period under §141.86(d) that commences after April 11, 2000, unless the State has waived prior State approval of non-first-draw sample sites selected by the system pursuant to §141.86(b)(5); or

(ii) If the State has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to §141.86(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to paragraph (a)(1)(i) of this section.

(3) ~~By the applicable date in §141.86(d)(1) for commencement of monitoring, each non-transient, non-community water system which does not complete its sampling pool with tier 1 sampling sites meeting the criteria in §141.86(a)(6) shall send a letter to the State justifying its selection of sampling sites under §141.86(a)(7).~~ No later than 60 days after the addition of a new source or any change in water treatment, unless the State requires earlier notification, a water system deemed to have optimized corrosion control under §141.81(b)(3), a water system subject to reduced monitoring pursuant to §141.86(d)(4), or a water system subject to a monitoring waiver pursuant to §141.86(g), shall send written documentation to the State describing the change. In those instances where prior State approval of the treatment change or new source is not required, water systems are encouraged to provide the notification to the State beforehand to minimize the risk the treatment change or new source will adversely affect optimal corrosion control.

(4) ~~By the applicable date in §141.86(d)(1) for commencement of monitoring, each water system~~

~~with lead service lines that is not able to locate the number of sites served by such lines required under §141.86(a)(9) shall send a letter to the State demonstrating why it was unable to locate a sufficient number of such sites based upon the information listed in §141.86(a)(2).~~ Any small system applying for a monitoring waiver under §141.86(g), or subject to a waiver granted pursuant to §141.86(g)(3), shall provide the following information to the State in writing by the specified deadline:

(i) By the start of the first applicable monitoring period in §141.86(d), any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of §§141.86(g)(1) and (2).

(ii) No later than nine years after the monitoring previously conducted pursuant to §141.86(g)(2) or §141.86(g)(4)(i), each small system desiring to maintain its monitoring waiver shall provide the information required by §§141.86(g)(4)(i) and (ii).

(iii) No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver shall provide written notification to the State, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

(iv) By October 10, 2000, any small system with a waiver granted prior to April 11, 2000 and that has not previously met the requirements of §141.86(g)(2) shall provide the information required by that paragraph.

(5) ~~Each water system that requests that the State reduce the number and frequency of sampling shall provide the information required under §141.86(d)(4).~~ Each ground water system that limits water quality parameter monitoring to a subset of entry points under §141.87(c)(3) shall provide, by the commencement of such monitoring, written correspondence to the State that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(b) *Source water monitoring reporting requirements*. (1) A water system shall report the sampling results for all source water samples collected in accordance with §141.88 within the first 10 days following the end of each source water monitoring period (i.e., annually, per compliance period, per compliance cycle) specified in §141.88.

(2) With the exception of the first round of source water sampling conducted pursuant to §141.88(b), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

(c) *Corrosion control treatment reporting requirements*. By the applicable dates under §141.81, systems shall report the following information:

(1) For systems demonstrating that they have already optimized corrosion control, information required in §141.81(b) (2) or (3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under §141.82(a).

(3) For systems required to evaluate the effectiveness of corrosion control treatments under §141.82(c), the information required by that paragraph.

(4) For systems required to install optimal corrosion control designated by the State under §141.82(d), a letter certifying that the system has completed installing that treatment.

(d) *Source water treatment reporting requirements*. By the applicable dates in §141.83, systems shall provide the following information to the State:

(1) If required under §141.83(b)(1), their recommendation regarding source water treatment;

(2) For systems required to install source water treatment under §141.83(b)(2), a letter certifying that the system has completed installing the treatment designated by the State within 24 months after the State designated the treatment.

(e) *Lead service line replacement reporting requirements*. Systems shall report the following information to the State to demonstrate compliance with the requirements of §141.84:

(1) Within 12 months after a system exceeds the lead action level in sampling referred to in §141.84(a), the system shall demonstrate in writing to the State that it has conducted a material evaluation, including the evaluation in §141.86(a), to identify the initial number of lead service lines in its distribution system, and shall provide the State with the system's schedule for replacing annually at least 7 percent of the initial number of lead service lines in its distribution system.

(2) Within 12 months after a system exceeds the lead action level in sampling referred to in §141.84(a), and every 12 months thereafter, the system shall demonstrate to the State in writing that the system has either:

(i) Replaced in the previous 12 months at least 7 percent of the initial lead service lines (or a greater number of lines specified by the State under §141.84~~(f)~~(e)) in its distribution system, or

(ii) Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in §141.84(c) shall equal at least 7 percent of the initial number of lead lines identified under paragraph (a) of this section (or the percentage specified by the State under §141.84~~(f)~~(e)).

(3) The annual letter submitted to the State under paragraph (e)(2) of this section shall contain the following information:

(i) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;

(ii) The number and location of each lead service line replaced during the previous year of the system's replacement schedule;

(iii) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(4) ~~As soon as practicable, but in no case later than three months after a system exceeds the lead action level in sampling referred to in §141.84(a), any system seeking to rebut the presumption that it has control over the entire lead service line pursuant to §141.84(d) shall submit a letter to the State describing the legal authority (e.g., state statutes, municipal ordinances, public service contracts or other applicable legal authority) which limits the system's control over the service lines and the extent of the system's control.~~ Any system which collects lead service line samples following partial lead service line replacement required by §141.84 shall report the results to the State within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the State. States, at their discretion may eliminate this requirement to report these monitoring results. Systems shall also report any additional information as specified by the State, and in a time and manner prescribed by the State, to verify that all partial lead service line replacement activities have taken place.

(f) *Public education program reporting requirements*. (1) ~~By December 31st of each year, any water system that is subject to the public education requirements in §141.85 shall submit a letter to the State demonstrating that the system has delivered the public education materials that meet the content requirements in §141.85(a) and (b) and the delivery requirements in §141.85(c). This information shall include a list of all the newspapers, radio stations, television stations, facilities and organizations to which the system delivered public education materials during the previous year. The water system shall submit the letter required by this paragraph annually for as long as it exceeds the lead action level.~~ Any water system that is subject to the public education requirements in §141.85 shall, within ten days after the end of each period in which the system is required to perform public education tasks in accordance with §141.85(c), send written documentation to the State that contains:

(i) A demonstration that the system has delivered the public education materials that meet the content requirements in §141.85(a) and (b) and the delivery requirements in §141.85(c); and

(ii) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.

(2) Unless required by the State, a system that previously has submitted the information required by paragraph (f)(1)(ii) of this section need not resubmit the information required by paragraph (f)(1)(ii) of this section, as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

(g) *Reporting of additional monitoring data*. Any system which collects sampling data in addition to that required by this subpart shall report the results to the State within the first ten days following the end of the applicable monitoring period under §§141.86, 141.87 and 141.88 during which the samples are collected.

(h) *Reporting of 90th percentile lead and copper concentrations where the State calculates a system's 90th percentile concentrations*. A water system is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by paragraph (a)(1)(iv) of this section if:

(1) The State has previously notified the water system that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to paragraph (h)(2)(i) of this section, and has specified a date before the end of the applicable monitoring period

by which the system must provide the results of lead and copper tap water samples;

(2) The system has provided the following information to the State by the date specified in paragraph (h)(1) of this section:

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under §141.86(a)(3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool, pursuant to paragraph (a)(1)(i) of this section; and

(ii) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

(3) The State has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system before the end of the monitoring period.

**§141.91 Recordkeeping requirements.**

Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by §141.81 through §141.88. Each water system shall retain the records required by this section for no fewer than 12 years.

**PART 142 -- NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION**

**Subpart B--Primary Enforcement Responsibility**

**§142.14 Records kept by States.**

> ***Note:*** *The entire text of §142.14 is not included in this document; only the portions relevant to the LCRMR rulemaking have been included.*

(d) Each State which has primary enforcement responsibility shall retain, for not less than 12 years, files which shall include for each such public water systems in the State:

*Note: (d)(1) through (d)(7) have not changed with the LCRMR..*

(8) Records of the currently applicable or most recent State determinations, including all supporting information and an explanation of the technical basis for each decision, made under the following provisions of 40 CFR, part 141, subpart I for the control of lead and copper:

(i) Section 141.81(b) -- for any water system deemed to be optimized under §141.81(b)(1) or (b)(3) of this chapter, any conditions imposed by the State on specific water systems to ensure the continued operation and maintenance of corrosion control treatment in place;

~~(i)~~(ii) Section 141.82(b)--decisions to require a water system to conduct corrosion control treatment studies;

~~(ii)~~(iii) Section 141.82(d)--designations of optimal corrosion control treatment;

~~(iii)~~(iv) Section 141.82(f)--designations of optimal water quality parameters;

~~(iv)~~(v) Section 141.82(h)--decisions to modify a public water system's optimal corrosion control treatment or water quality parameters;

~~(v)~~(vi) Section 141.83(b)(2)--determinations of source water treatment; ~~and~~

~~(vi)~~(vii) Section 141.83(b)(4)--designations of maximum permissible concentrations of lead and copper ~~concentrations~~ in source water~~.~~;

~~(vii) Section 141.84(e)--determinations that a system does not control entire lead service lines.~~

(viii) Section 141.84~~(f)~~(e)--determinations establishing ~~a~~ shorter lead service line replacement schedules ~~than required by~~ under §141.84~~.~~;

(ix) Sections 141.81(b)(3)(iii), 141.86(d)(4)(vii), and 141.86(g)(4)(iii) -- determinations of additional monitoring requirements and/or other actions required to maintain optimal corrosion control by systems monitoring for lead and copper at the tap less frequently than once every six months that change treatment or add a new source of water;

(x) Section 141.85 -- system-specific decisions regarding the content of written public education materials and/or the distribution of these materials;

(xi) Section 141.86(b)(5) -- system-specific determinations regarding use of non-first-draw samples at non-transient non-community water systems, and community water systems meeting the criteria of §§141.85(c)(7)(i) and (ii) of this chapter, that operate 24 hours a day;

(xii) Section 141.86(c) -- system-specific designations of sampling locations for systems subject to reduced monitoring;

(xiii) Section 141.86(d)(iv)(A) -- system-specific determinations pertaining to alternative sample collection periods for systems subject to reduced monitoring;

(xiv) Section 141.86(g) -- determinations of small system monitoring waivers, waiver recertifications, and waiver revocations;

(xv) Section 141.87(c)(3) -- determinations regarding representative entry point locations at ground water systems;

(xvi) Section 141.90(e)(4) -- system-specific determinations regarding the submission of information to demonstrate compliance with partial lead service line replacement requirements; and

(xvii) Section 141.90(f) -- system-specific decisions regarding the resubmission of detailed documentation demonstrating completion of public education requirements.

(9) Records of reports and any other information submitted by PWSs under §141.90~~;~~ of this chapter, including records of any 90th percentile values calculated by the State under §141.90(h) of this chapter.

(10) Records of State activities, and the results thereof, to ~~verify compliance with State determinations issued under §§141.82(f), 141.82(h), 141.83(b)(2), and 141.83(b)(4) and compliance with lead service line replacement schedules under §141.84.~~:

(i) Verify compliance with State determinations issued under §§141.82(f) of this chapter, 141.82(h) of this chapter, 141.83(b)(2) of this chapter, and 141.83(b)(4) of this chapter;

(ii) Verify compliance with the requirements related to partial lead service line replacement under §141.84(d) of this chapter and compliance with lead service line replacement schedules under §141.84(e) of this chapter; and

(iii) Invalidate tap water lead and copper samples under §141.86(f) of this chapter.

(11) Records of each system's currently applicable or most recently designated monitoring requirements. If, for the records identified in ~~§§142.14(d)(8)(i) through 142.14(d)(8)(viii) above~~ paragraphs (d)(8)(i) through (d)(8)(xvii) of this section, no change is made to State ~~decision~~ determinations during a 12-year retention period, the State shall ~~maintain~~ retain the record until a new decision, determination, or designation has been issued.

**§142.15 Reports by States.**

*Note: the entire text of §142.15 is not included in this document; only the portions relevant to the LCRMR rulemaking have been included.*

*Note: (c)(1) through (c)(3) have not changed with the LCRMR.*

(c)(4) States shall report ~~to EPA by May 15, August 15, November 15 and February 15 of each year~~ quarterly, in a format and on a schedule prescribed by the Administrator, the following information related to each system's compliance with the treatment techniques for lead and copper under 40 CFR Part 141, Subpart I during the preceding calendar quarter. Specifically, States shall report ~~the name and PWS identification number of~~ as follows:

(i) For any reports provided prior to May 15, 2000, States shall report the name and PWS identification number:

~~(i)~~(A) Each public water system which exceeded the lead and copper action levels and the date upon which the exceedance occurred;

~~(ii)~~(B) Each public water system required to complete the corrosion control evaluation specified in §141.82(c) and the date the State received the results of the evaluations from each system;

~~(iii)~~(C) Each public water system for which the State has designated optimal corrosion control treatment under §141.82(d), the date of the determination, and each system that completed installation of treatment as certified under §141.90(c)(3);

~~(iv)~~(D) Each public water system for which the State has designated optimal water quality parameters under §141.82(f) and the date of the determination;

~~(v)~~(E) Each public water system which the State has required to install source water treatment under §141.83(b)(2), the date of the determination, and each system that completed installation of treatment as certified under §141.90(d)(2);

~~(vi)~~(F) Each public water system for which the State has specified maximum permissible source water levels under §141.83(b)(4); and

~~(vii)~~(G) Each public water system required to begin replacing lead service lines as specified in §141.84, each public water system for which the State has established a replacement schedule under §141.84(f), and each system reporting compliance with its replacement schedule under §141.90(e)(2).

(ii) For any reports provided after May 14, 2000 and before January 12, 2002, States may report in accordance with either paragraph (c)(4)(i) or (c)(4)(iii) of this section.

(iii) For all reports submitted on or after January 12, 2002, States shall report the PWS identification number of each public water system identified in paragraphs (A) through (F) of this section.

(A) For each large and medium-size public water system, all 90th percentile lead levels calculated during each monitoring period specified in §141.86 of this chapter, and the first and last day of the

monitoring period for which the 90th percentile lead level was calculated;

(B) For each small public water system, the 90th percentile lead level calculated during each monitoring period in which the system exceeds the lead action level, and the first and last day of each monitoring period in which an exceedance occurred;

(C) For each public water system (regardless of size), the 90th percentile copper level calculated during each monitoring period in which the system exceeds the copper action level, and the first and last day of each monitoring period in which an exceedance occurred;

(D) For each public water system for which the State has designated optimal water quality parameters under §141.82(f) of this chapter, or which the State has deemed to have optimized corrosion control under §141.81(b)(1) or (b)(3) of this chapter, the date of the determination and the paragraph(s) under which the State made its determination;

(E) For each public water system required to begin replacing lead service lines as specified in §141.84 of this chapter and the date each system must begin replacement; and

(F) For each public water system that has implemented optimal corrosion control, completed applicable source water treatment requirements pursuant to §141.83 of this chapter and/or completed lead service line replacement requirements pursuant to §141.84 of this chapter, and the date of the State's determination that these requirements have been met. The date reported shall be the latest of the following events:

(*1*) The date the State designates optimal water quality parameters under §141.82(f) of this chapter or deems the system to have optimized corrosion control pursuant to §141.81(b)(1) or (b)(3) of this chapter;

(*2*) For systems triggered into source water treatment, the date the State designates maximum permissible source water levels under §141.83(b)(4) of this chapter or determines pursuant to §141.83(b)(2) of this chapter that source water treatment is not required; or

(*3*) For systems triggered into lead service line replacement, the date the system completes lead service line replacement or becomes eligible to cease lead service line replacement pursuant to §141.84(f) of this chapter.

(d) The reports submitted pursuant to this section shall be made available by the State to the public for inspection at one or more locations within the State.

**§142.16 Special primacy requirements.**

*Note: the entire text of §142.16 is not included in this document; only the portions relevant to the LCRMR rulemaking have been included.*

(d) Requirements for States to adopt 40 CFR part 141, Subpart I--Control of Lead and Copper. An application for approval of a State program revision which adopts the requirements specified in 40 CFR part 141, subpart I, must contain (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements) a description of how the State will accomplish the following program requirements:

(1) ~~Sections 141.82(d), 141.82(f), 141.82(h)--Designating optimal corrosion control treatment methods, optimal water quality parameters and modifications thereto~~. Section 141.82 -- State designation of optimal corrosion control.

(i) Sections 141.82(d), 141.82(f), and 141.82(h) -- Designating optimal corrosion control treatment methods, optimal water quality parameters, and modifications thereto.

(ii) Section 141.82(g) -- Designating an alternative approach for aggregating multiple measurements collected during the same day for a water quality parameter at a sampling location, if the State elects to adopt a formula other than the one specified in §141.82(g)(1) of this chapter.

(2) Sections 141.83(b)(2) and 141.83(b)(4)--Designating source water treatment methods, maximum permissible source water levels for lead and copper and modifications thereto.

(3) Section 141.90(e)--Verifying compliance with lead service line replacement schedules and ~~of PWS demonstrations of limited control over lead service lines~~ completion of all partial lead service line replacement activities.

(4) Section 141.86(d)(4)(iv)(A) -- Designating an alternative period for sample collection for community water systems subject to reduced monitoring.