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Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter D —Water Programs
Part 141 —National Primary Drinking Water Regulations
Subpart I —Control of Lead and Copper

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§ 141.84 Lead service line replacement requirements.

- (a) **Lead service line inventory.** All water systems must develop an inventory to identify the materials of service lines connected to the public water distribution system. The inventory must meet the following requirements:
- (1) All water systems must develop an initial inventory by October 16, 2024, and submit it to the primacy agency in accordance with § 141.90(e).
 - (2) The inventory must include all service lines connected to the public water distribution system regardless of ownership status (e.g., where service line ownership is shared, the inventory would include both the portion of the service line owned by the water system and the customer-owned portion of the service line).
 - (3) A water system must use any information on lead and galvanized iron or steel that it has identified pursuant to § 141.42(d) when conducting the inventory of service lines in its distribution system for the initial inventory under paragraph (a)(1) of this section. The water system must also review the sources of information listed in paragraphs (a)(3)(i) through (iv) of this section to identify service line materials for the initial inventory. The water system may use other sources of information not listed in paragraphs (a)(3)(i) through (iv) of this section if approved by the State.
 - (i) All construction and plumbing codes, permits, and existing records or other documentation which indicates the service line materials used to connect structures to the distribution system.
 - (ii) All water system records, including distribution system maps and drawings, historical records on each service connection, meter installation records, historical capital improvement or master plans, and standard operating procedures.
 - (iii) 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.
 - (iv) Any resource, information, or identification method provided or required by the State to assess service line materials.
 - (4) Each service line, or portion of the service line where ownership is split, must be categorized in the following manner:
 - (i) “Lead” where the service line is made of lead.

- (ii) "Galvanized Requiring Replacement" where a galvanized service line is or was at any time downstream of a lead service line or is currently downstream of a "Lead Status Unknown" service line. If the water system is unable to demonstrate that the galvanized service line was never downstream of a lead service line, it must presume there was an upstream lead service line.
 - (iii) "Non-lead" where the service line is determined through an evidence-based record, method, or technique not to be lead or galvanized requiring replacement. The water system may classify the actual material of the service line (*i.e.*, plastic or copper) as an alternative to classifying it as "Non-lead."
 - (iv) "Lead Status Unknown" where the service line material is not known to be lead, galvanized requiring replacement, or a non-lead service line, such as where there is no documented evidence supporting material classification. The water system may classify the line as "Unknown" as an alternative to classifying it as "Lead Status Unknown," however, all requirements that apply to "Lead Status Unknown" service lines must also apply to those classified as "Unknown." Water systems may elect to provide more information regarding their unknown lines as long as the inventory clearly distinguishes unknown service lines from those where the material has been verified through records or inspection.
- (5) Water systems shall identify and track service line materials in the inventory as they are encountered in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).
- (6) Water systems must update the inventory based on all applicable sources described in paragraphs (a)(3) and (5) of this section and any lead service line replacements or service line material inspections that may have been conducted. The water system may use other sources of information if approved by the State and must use other sources of information provided or required by the State. Water systems must submit the updated inventory to the State in accordance with § 141.90(e). The inventory updates must be reflected in the publicly accessible inventory no less frequently than when required to be submitted to the State.
 - (i) Water systems whose inventories contain only non-lead service lines are not required to provide inventory updates to the State or to the public. If, in the future, such a water system finds a lead service line within its system, it must prepare an updated inventory in accordance with paragraph (a) of this section on a schedule established by the State.
 - (ii) [Reserved]
- (7) To calculate the number of service line replacements applicable to paragraphs (f) and (g) of this section, the replacement rate must be applied to the sum of known lead and galvanized requiring replacement service lines when the system first exceeds the trigger or action level plus the number of lead status unknown service lines in the beginning of each year of a system's annual goal or mandatory lead service line replacement program.
 - (i) Each service line shall count only once for purposes of calculating the required number of service line replacements, even where the ownership of the service line is split and both the customer-owned and system-owned portions require replacement.

- (ii) The number of service lines requiring replacement must be updated annually to subtract the number of lead status unknown service lines that were discovered to be non-lead and to add the number of non-lead service lines that were discovered to be a lead or galvanized requiring replacement service line.
 - (iii) Verification of a lead status unknown service line as non-lead in the inventory does not count as a service line replacement.
- (8) The service line materials inventory must be publicly accessible.
 - (i) The inventory must include a location identifier, such as a street address, block, intersection, or landmark, associated with each lead service line and galvanized requiring replacement service line. Water systems may, but are not required to, include a locational identifier for lead status unknown service lines or list the exact address of each service line.
 - (ii) Water systems serving greater than 50,000 persons must make the publicly accessible inventory available online.
- (9) When a water system has no lead, galvanized requiring replacement, or lead status unknown service lines (regardless of ownership) in its inventory, it may comply with the requirements in paragraph (a)(8) of this section using a written statement, in lieu of the inventory, declaring that the distribution system has no lead service lines or galvanized requiring replacement service lines. The statement must include a general description of all applicable sources described in paragraphs (a)(3), (5), and (6) of this section used to make this determination.
- (10) Instructions to access the service line inventory (including inventories consisting only of a statement in accordance with paragraph (a)(9) of this section) must be included in Consumer Confidence Report in accordance with § 141.153(d)(4)(xi).
- (b) **Lead service line replacement plan.** All water systems with one or more lead, galvanized requiring replacement, or lead status unknown service lines in their distribution system must, by October 16, 2024, submit a lead service line replacement plan to the State in accordance with § 141.90(e). The lead service line replacement plan must be sufficiently detailed to ensure a system is able to comply with the lead service line replacement requirements in accordance with this section. The plan must include a description of:
 - (1) A strategy for determining the composition of lead status unknown service lines in its inventory;
 - (2) A procedure for conducting full lead service line replacement;
 - (3) A strategy for informing customers before a full or partial lead service line replacement;
 - (4) For systems that serve more than 10,000 persons, a lead service line replacement goal rate recommended by the system in the event of a lead trigger level exceedance;
 - (5) A procedure for customers to flush service lines and premise plumbing of particulate lead;
 - (6) A lead service line replacement prioritization strategy based on factors including but not limited to the targeting of known lead service lines, lead service line replacement for disadvantaged consumers and populations most sensitive to the effects of lead; and
 - (7) A funding strategy for conducting lead service line replacements which considers ways to accommodate customers that are unable to pay to replace the portion they own.
- (c) **Operating procedures for replacing lead goosenecks, pigtails, or connectors.**

- (1) The water system must replace any lead gooseneck, pigtail, or connector it owns when encountered during planned or unplanned water system infrastructure work.
- (2) The water system must offer to replace a customer-owned lead gooseneck, pigtail, or connector; however, the water system is not required to bear the cost of replacement of the customer-owned parts.
- (3) The water system is not required to replace a customer-owned lead gooseneck, pigtail, or connector if the customer objects to its replacement.
- (4) The replacement of a lead gooseneck, pigtail, or connector does not count for the purposes of meeting the requirements for goal-based or mandatory lead service line replacements, in accordance with paragraphs (f) and (g) of this section, respectively.
- (5) Upon replacement of any gooseneck, pigtail, or connector that is attached to a lead service line, the water system must follow risk mitigation procedures specified in § 141.85(f)(2).
- (6) The requirements of paragraphs (c)(1), (2), (3), and (5) of this section do not apply if state law includes lead connectors in the definition of lead service lines, prohibits partial lead service line replacements, and requires systems to remove all lead service lines irrespective of a system's 90th percentile lead level.

(d) *Requirements for conducting lead service line replacement that may result in partial replacement.*

- (1) Any water system that plans to partially replace a lead service line (e.g., replace only the portion of a lead service line that it owns) in coordination with planned infrastructure work must provide notice to the owner of the affected service line, or the owner's authorized agent, as well as non-owner resident(s) served by the affected service line at least 45 days prior to the replacement. The notice must explain that the system will replace the portion of the line it owns and offer to replace the portion of the service line not owned by the water system. The water system is not required to bear the cost of replacement of the portion of the affected service line not owned by the water system.
 - (i) Before the affected service line is returned to service, the water system must provide notification meeting the content requirements of § 141.85(a) explaining that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement, information about the health effects of lead, and actions consumers can take to minimize their exposure to lead in drinking water. In instances where multi-family dwellings are served by the affected service line to be partially replaced, the water system may elect to post the information at a conspicuous location instead of providing individual notification to all residents.
 - (ii) The water system must provide information about service line flushing in accordance with the procedure developed in paragraph (b)(5) of this section before the affected service line is returned to service.
 - (iii) The water system must provide the consumer with a pitcher filter or point-of-use device certified by an American National Standards Institute accredited certifier to reduce lead, six months of replacement cartridges, and instructions for use before the affected service line is returned to service. If the affected service line serves more than one residence or non-residential unit (e.g., a multi-unit building), the water system must provide a filter, six months of replacement cartridges and use instructions to every residence in the building.

- (iv) The water system must offer to collect a follow up tap sample between three months and six months after completion of any partial replacement of a lead service line. The water system must provide the results of the sample in accordance with § 141.85(d).
- (2) Any water system that replaces the portion of the lead service line it owns due to an emergency repair, must provide notice and risk mitigation measures to the persons served by the affected service line in accordance with paragraphs (d)(1)(i) through (iii) of this section before the affected service line is returned to service.
- (3) When a water system is notified by the customer that the customer's portion of the lead service line will be replaced, the water system must make a good faith effort to coordinate simultaneous replacement of its portion of the service line. If simultaneous replacement cannot be conducted, the water system must replace its portion as soon as practicable but no later than 45 days from the date the customer replaces its portion of the lead service line. The water system must provide notification and risk mitigation measure in accordance with paragraphs (d)(1)(i) through (iii) of this section. If the water system fails to replace its portion of the lead service line within 45 days from the date the customer replaces the customer's portion of the lead service line, the water system must notify the State within 30 days of failing to meet the deadline in accordance with § 141.90(e) and complete the replacement no later than 180 days of the date the customer replaces its portion.
- (4) When a water system is notified or otherwise learns that replacement of a customer-owned lead service line has occurred within the previous six months and left in place a system-owned lead service line, the water system must replace its portion within 45 days from the day of becoming aware of the customer replacement. The water system must provide notification and risk mitigation measures in accordance with paragraphs (d)(1)(i) through (iii) of this section within 24 hours of becoming aware of the customer replacement. If the water system fails to replace its portion of the affected service line within 45 days of becoming aware of the customer replacement, it must notify the State within 30 days of failing to meet the deadline in accordance with § 141.90(e). The water system must complete the replacement no later than 180 days after the date the customer replaces its portion.
- (5) When a water system is notified or otherwise learns of a replacement of a customer-owned lead service line which has occurred more than six months in the past, the water system is not required to complete the lead service line replacement of the system-owned portion under this paragraph (d)(5), however the system-owned portion must still be included in the calculation of a lead service line replacement rate under paragraph (a)(7) of this section.
- (e) **Requirements for conducting full lead service line replacement.** Any water system that conducts a full lead service line replacement must provide notice to the owner of the affected service line, or the owner's authorized agent, as well as non-owner resident(s) served by the affected service line within 24 hours of completion of the replacement. The water system is not required to bear the cost of replacement of the portion of the lead service line not owned by the water system.
 - (1) The notification must meet the content requirements of § 141.85(a) explaining that consumers may experience a temporary increase of lead levels in their drinking water due to the replacement, information about the health effects of lead, and actions consumers can take to minimize their exposure to lead in drinking water. In instances where multi-family dwellings are served by the lead service line to be replaced, the water system may elect to post the information at a conspicuous location instead of providing individual notification to all residents.

- (2) The water system must provide information about service line flushing in accordance with the procedure developed under paragraph (b)(5) of this section before the replaced service line is returned to service.
 - (3) The water system must provide the consumer with a pitcher filter or point-of-use device certified by an American National Standards Institute accredited certifier to reduce lead, six months of replacement cartridges, and instructions for use before the replaced service line is returned to service. If the lead service line serves more than one residence or non-residential unit (e.g., a multi-unit building), the water system must provide a filter and six months of replacement cartridges and use instructions to every residence in the building.
 - (4) The water system must offer to the consumer to take a follow up tap sample between three months and six months after completion of any full replacement of a lead service line. The water system must provide the results of the sample to the consumer in accordance with paragraph (d) of this section.
- (f) ***Goal-based full lead service line replacement for water systems whose 90th percentile lead level is above the trigger level but at or below the lead action level.*** Water systems that serve more than 10,000 persons whose 90th percentile lead level from tap samples taken pursuant to § 141.86 is above the lead trigger level but at or below the lead action level must conduct goal-based full lead service line replacement at a rate approved by the state.
- (1) The water system must calculate the number of full lead service line replacements it must conduct annually in accordance with paragraph (a)(7) of this section.
 - (2) Replacement of lead service lines must be conducted in accordance with the requirements of paragraph (d) or (e) of this section.
 - (3) Only full lead service line replacements count towards a water system's annual replacement goal. Partial lead service line replacements do not count towards the goal.
 - (4) The water system must provide information to customers with lead, galvanized requiring replacement, or lead status unknown service lines as required in § 141.85(g).
 - (5) Any water system that fails to meet its lead service line replacement goal must:
 - (i) Conduct public outreach activities pursuant to § 141.85(h) until either the water system meets its replacement goal, or tap sampling shows the 90th percentile of lead is at or below the trigger level for two consecutive one-year monitoring periods.
 - (ii) Recommence its goal-based lead service line replacement program pursuant to this paragraph (f)(5)(ii) if the 90th percentile lead level anytime thereafter exceeds the lead trigger level but is at or below the lead action level.
 - (6) The first year of lead service line replacement shall begin on the first day following the end of the tap sampling period in which the lead trigger level was exceeded. If sampling is required annually or less frequently, the end of the tap sampling monitoring period is September 30 of the calendar year in which the sampling occurs. If the State has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

- (g) ***Mandatory full lead service line replacement for water systems whose 90th percentile lead level exceeds the lead action level.*** Water systems serving more than 10,000 persons that exceed the lead action level in tap samples taken pursuant to § 141.86 must conduct mandatory full lead service line replacement at an average annual rate of at least three percent, calculated on a two-year rolling basis.
- (1) The average annual number of full lead service line replacements must be calculated in accordance with paragraph (a)(7) of this section.
 - (2) Lead service line replacement must be conducted in accordance with the requirements of paragraphs (d) and (e) of this section.
 - (3) Only full lead service line replacement count towards a water system's mandatory replacement rate of at least three percent annually. Partial lead service line replacements do not count towards the mandatory replacement rate.
 - (4) Water systems must provide information to customers with lead, galvanized requiring replacement, or lead status unknown service lines consistent with § 141.85(g).
 - (5) Community water systems serving 10,000 or fewer persons and Non-transient non-community water systems for which the state has approved or designated lead service line replacement as a compliance option must conduct lead service line replacement as described in § 141.93(a)(1). Replacement of lead service lines must be conducted in accordance with the requirements of paragraphs (d) and (e) of this section.
 - (6) A water system may cease mandatory lead service line replacement when it has conducted a cumulative percentage of replacements greater than or equal to 3%, or other percentage specified in paragraph (g)(9) of this section, of the service lines specified in paragraph (a)(7) of this section multiplied by the number of years that elapsed from when the system most recently began mandatory lead service line replacement and the date on which the system's 90th percentile lead level, in accordance with § 141.80(c)(4), has been calculated to be at or below the lead action level during each of four consecutive six-month tap sampling monitoring periods. If tap samples collected in any such system thereafter exceed the lead action level, the system shall recommence mandatory lead service line replacement at the same two-year rolling average rate, unless the State has designated an alternate replacement rate under paragraph (g)(9) of this section.
 - (7) The water system may also cease mandatory lead service line replacement if the system has no remaining lead status unknown service lines in its inventory and obtains refusals to conduct full lead service line replacement or non-responses from every remaining customer in its distribution system served by either a full or partial lead service line, or a galvanized requiring replacement service line. For purposes of this paragraph (g)(7) and in accordance with § 141.90(e), a water system must provide documentation to the State of customer refusals including a refusal signed by the customer, documentation of a verbal statement made by the customer refusing replacement, or documentation of no response from the customer after the water system made a minimum of two good faith attempts to reach the customer regarding full lead service line replacement. If the water system's 90th percentile exceeds the lead action level again, it must contact all customers served by a full or partial lead service line or a galvanized requiring replacement service line with an offer to replace the customer-owned portion. Nothing in this paragraph (g)(7) requires the water system to bear the cost of replacement of the customer-owned lead service line.
 - (8) The first year of lead service line replacement shall begin on the first day following the end of the tap sampling period in which lead action level was exceeded.

(9) 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 the State determines a shorter replacement schedule is feasible. The State shall make this determination in writing and notify the system of its finding within six months after the system is required to begin lead service line replacement under paragraph (g) of this section.

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

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