

## Reference Guide for Public Water Systems Lead and Copper Rule Comparison

This table compares the major differences between the current Lead and Copper Rule (LCR) and the final Lead and Copper Rule revisions (LCRR). In general, requirements that are unchanged are not listed. For existing rule requirements visit: <https://www.epa.gov/dwreginfo/lead-and-copper-rule>. For more information on the new LCR visit: <https://www.epa.gov/ground-water-and-drinking-water/final-revisions-lead-and-copper-rule>.

CURRENT LCR	FINAL REVISED LCRR
<i>Action Level (AL) and Trigger Level (TL)</i>	
<ul style="list-style-type: none"> <li>90<sup>th</sup> percentile (P90) level above lead AL of 15 µg/L or copper AL of 1.3 mg/L requires additional actions.</li> </ul>	<ul style="list-style-type: none"> <li>90<sup>th</sup> percentile (P90) level above lead AL of 15 µg/L or copper AL of 1.3 mg/L requires more actions than the previous rule.</li> <li>Defines lead trigger level (TL) of 10 &lt; P90 ≤ 15 µg/L that triggers additional planning, monitoring, and treatment requirements.</li> </ul>
<i>Lead and Copper Tap Monitoring</i>	
<p><b>Sample Site Selection</b></p> <ul style="list-style-type: none"> <li>Prioritizes collection of samples from sites with sources of lead in contact with drinking water.</li> <li>Highest priority given to sites served by copper pipes with lead solder installed after 1982 but before the state ban on lead pipes and/or LSLs.</li> <li>Systems must collect 50% of samples from LSLs, if available.</li> </ul>	<p><b>Sample Site Selection</b></p> <ul style="list-style-type: none"> <li>Changes priorities for collection of samples with a greater focus on LSLs.</li> <li>Prioritizes collecting samples from sites served by LSLs –all samples must be collected from sites served by LSLs, if available.</li> <li>No distinction in prioritization of copper pipes with lead solder by installation date.</li> <li>Improved tap sample site selection tiering criteria.</li> </ul>
<p><b>Collection Procedure</b></p> <ul style="list-style-type: none"> <li>Requires collection of the first liter sample after water has sat stagnant for a minimum of 6 hours.</li> </ul>	<p><b>Collection Procedure</b></p> <ul style="list-style-type: none"> <li>Requires collection of the fifth-liter sample in homes with LSLs after water has sat stagnant for a minimum of 6 hours and maintains first-liter sampling protocol in homes without LSLs.</li> <li>Adds requirement that samples must be collected in wide-mouth bottles.</li> </ul>

CURRENT LCR	FINAL REVISED LCRR
	<ul style="list-style-type: none"> <li>Prohibits sampling instructions that include recommendations for aerator cleaning/removal and pre-stagnation flushing prior to sample collection.</li> </ul>
<p><b>Monitoring Frequency</b></p> <ul style="list-style-type: none"> <li>Samples are analyzed for both lead and copper.</li> <li>Systems must collect standard number of samples, based on population; semi-annually unless they qualify for reduced monitoring.</li> <li>Systems can qualify for annual or triennial monitoring at reduced number of sites. Schedule based on number of consecutive years meeting the following criteria:               <ul style="list-style-type: none"> <li>Serves <math>\leq 50,000</math> people and <math>\leq</math> lead &amp; copper ALs.</li> <li>Serves any population size, meets state-specified optimal water quality parameters (OWQPs), and <math>\leq</math> lead AL.</li> </ul> </li> <li>Triennial monitoring also applies to any system with lead and copper 90<sup>th</sup> percentile levels <math>\leq 0.005</math> mg/L and <math>\leq 0.65</math> mg/L, respectively, for 2 consecutive 6-month monitoring periods.</li> <li>9-year monitoring waiver available to systems serving <math>\leq 3,300</math>.</li> </ul>	<p><b>Monitoring Frequency</b></p> <ul style="list-style-type: none"> <li>Some samples may be analyzed for only lead when lead monitoring is conducted more frequently than copper.</li> <li>Copper follows the same criteria as the current rule.</li> <li>Lead monitoring schedule is based on P90 level for all systems as follows:               <ul style="list-style-type: none"> <li><b>P90 &gt; 15 <math>\mu\text{g/L}</math>:</b> Semi-annually at the standard number of sites.</li> <li><b>P90 &gt; 10 to 15 <math>\mu\text{g/L}</math>:</b> Annually at the standard number of sites.</li> <li><b>P90 <math>\leq 10</math> <math>\mu\text{g/L}</math>:</b> <ul style="list-style-type: none"> <li>Annually at the standard number of sites and triennially at reduced number of sites using same criteria as previous rule except copper 90<sup>th</sup> percentile level is not considered.</li> <li>Every 9 years based on current rule requirements for a 9-year monitoring waiver.</li> </ul> </li> </ul> </li> </ul>

CURRENT LCR	FINAL REVISED LCRR
<b><i>Corrosion Control Treatment (CCT) and Water Quality Parameters (WQPs)</i></b>	
<p><b>CCT</b></p> <ul style="list-style-type: none"> <li>• Systems serving &gt; 50,000 people were required to install treatment by January 1, 1997 with limited exception.</li> <li>• Systems serving ≤ 50,000 that exceed lead and/or copper AL are subject to CCT requirements (<i>e.g.</i>, CCT recommendation, study if required by primacy agency, CCT installation). They can discontinue CCT steps if no longer exceed both ALs for two consecutive 6-month monitoring periods.</li> <li>• Systems must operate CCT to meet any primacy agency-designated OWQPs that define optimal CCT.</li> <li>• There is no requirement for systems to re-optimize.</li> </ul>	<p><b>CCT</b></p> <ul style="list-style-type: none"> <li>• Specifies CCT requirements for systems with <math>10 &lt; P90 \text{ level} \leq 15 \mu\text{g/L}</math>: <ul style="list-style-type: none"> <li>○ <b>No CCT:</b> must conduct a CCT study if required by primacy agency.</li> <li>○ <b>With CCT:</b> must follow the steps for re-optimizing CCT, as specified in the rule.</li> </ul> </li> <li>• Systems with <math>P90 \text{ level} &gt; 15 \mu\text{g/L}</math>: <ul style="list-style-type: none"> <li>○ <b>No CCT:</b> must complete CCT installation regardless of their subsequent P90 levels.</li> <li>○ <b>With CCT:</b> must re-optimize CCT.</li> </ul> </li> <li>○ CWSs serving ≤ 10,000 people and non-transient water systems (NTNCWSs) can select an option other than CCT to address lead. <b><i>See Small System Flexibility.</i></b></li> </ul>
<p><b>CCT Options:</b> Includes alkalinity and pH adjustment, calcium hardness adjustment, and phosphate or silicate-based corrosion inhibitor.</p>	<p><b>CCT Options:</b> Removes calcium hardness as an option and specifies any phosphate inhibitor must be orthophosphate.</p>
<p><b>Regulated WQPs:</b></p> <ul style="list-style-type: none"> <li>• <b>No CCT:</b> pH, alkalinity, calcium, conductivity, temperature, orthophosphate (if phosphate-based inhibitor is used), silica (if silica-based inhibitor is used).</li> <li>• <b>With CCT:</b> pH, alkalinity, and based on type of CCT either orthophosphate, silica, or calcium.</li> </ul>	<p><b>Regulated WQPs:</b></p> <ul style="list-style-type: none"> <li>• Eliminates WQPs related to calcium hardness (<i>i.e.</i>, calcium, conductivity, and temperature).</li> </ul>
<p><b>WQP Monitoring</b></p> <ul style="list-style-type: none"> <li>• Systems serving ≥ 50,000 people must conduct regular WQP monitoring at entry points and within the distribution system.</li> <li>• Systems serving ≤ 50,000 people conduct monitoring only in those periods &gt; lead or copper AL.</li> </ul>	<p><b>WQP Monitoring</b></p> <ul style="list-style-type: none"> <li>• Systems serving ≥ 50,000 people must conduct regular WQP monitoring at entry points and within the distribution system.</li> </ul>

CURRENT LCR	FINAL REVISED LCRR
<ul style="list-style-type: none"> <li>• Contains provisions to sample at reduced number of sites in distribution system less frequency for all systems meeting their OWQPs.</li> </ul>	<ul style="list-style-type: none"> <li>• Systems serving <math>\leq 50,000</math> people must continue WQP monitoring until they no longer <math>&gt;</math> lead and/or copper AL for two consecutive 6-month monitoring periods.</li> <li>• To qualify for reduced WQP distribution monitoring, P90 must be <math>\leq 10 \mu\text{g/L}</math> and the system must meet its OWQPs.</li> </ul>
<p><b>Sanitary Survey Review:</b></p> <ul style="list-style-type: none"> <li>• Treatment must be reviewed during sanitary surveys; no specific requirement to assess CCT or WQPs.</li> </ul>	<p><b>Sanitary Survey Review:</b></p> <ul style="list-style-type: none"> <li>• CCT and WQP data must be reviewed during sanitary surveys against most recent CCT guidance issued by EPA.</li> </ul>
<p><b>Find-and-Fix:</b> No required follow-up samples or additional actions if an individual sample exceeds <math>15 \mu\text{g/L}</math>.</p>	<p><b>Find-and-Fix:</b> If individual tap samples <math>&gt; 15 \mu\text{g/L}</math>.</p> <ul style="list-style-type: none"> <li>○ Find-and-fix steps: <ul style="list-style-type: none"> <li>○ Collect tap sample at the same tap sample site within 30 days.</li> <li>○ For LSL, collect any liter or sample volume.</li> <li>○ If LSL is not present, collect 1 liter first draw after stagnation.</li> <li>○ For systems with CCT <ul style="list-style-type: none"> <li>○ Conduct WQP monitoring at or near the site <math>&gt; 15 \mu\text{g/L}</math>.</li> <li>○ Perform needed corrective action.</li> <li>○ Document customer refusal or nonresponse after 2 attempts.</li> <li>○ Provide information to local public health officials.</li> </ul> </li> </ul> </li> </ul>
<i>LSL Inventory and LSLR Plan</i>	
<p><b>Initial LSL Program Activities:</b></p> <ul style="list-style-type: none"> <li>• Systems were required to complete a materials evaluation by the time of initial sampling. No requirement to update materials evaluation.</li> <li>• No LSLR plan is required.</li> </ul>	<p><b>Initial LSL Program Activities:</b></p> <ul style="list-style-type: none"> <li>• All systems must develop an LSL inventory or demonstrate absence of LSLs within 3 years of final rule publication.</li> <li>• LSL inventory must be updated annually or triennially, based on their tap sampling frequency.</li> <li>• All systems with known or possible LSLs must develop an LSLR plan.</li> </ul>

**LSLR:**

- Systems with LSLs with P90 > 15 µg/L after CCT installation must annually replace ≥7% of number of LSLs in their distribution system when the lead action level is first exceeded.
- Systems must replace the LSL portion they own and offer to replace the private portion at the owner’s expense.
- Full LSLR, partial LSLR, and LSLs with lead sample results ≤15 µg/L (“test-outs”) count toward the 7% replacement rate.
- Systems can discontinue LSLR after 2 consecutive 6-month monitoring periods ≤ lead AL.

**LSLR:**

- Rule specifies replacement programs based on P90 level for CWSs serving > 3,300 people:
  - If P90 > 15 µg/L: Must fully replace 3% of LSLs per year based upon a 2 year rolling average (mandatory replacement) for at least 4 consecutive 6-month monitoring periods.
  - If P90 > 10 to 15 µg/L: Implement an LSLR program with replacement goals in consultation with the primacy agency for 2 consecutive 1-year monitoring periods.
- Small CWSs and NTNCWSs that select LSLR as their compliance option must complete LSLR within 15 years if P90 > 15 µg/L *See Small System Flexibility.*
- Annual LSLR rate is based on number of LSLs and galvanized requiring replacement when the system first exceeds the action level plus the current number of lead status unknown service lines.
- Only full LSLR (both customer-owned and system-owned portion) count toward mandatory rate or goal-based rate.
- All systems replace their portion of an LSL if notified by consumer of private side replacement within 45 days of notification of the private replacement. If the system cannot replace the system’s portion within 45 days, it must notify the state and replace the system’s portion within 180 days.
- Following each LSLR, systems must:
  - Provide pitcher filters/cartridges to each customer for 6 months after replacement. Provide pitcher filters/cartridges within 24 hours for full and partial LSLRs.
  - Collect a lead tap sample at locations served by replaced line within 3 to 6 months after replacement.
- Requires replacement of galvanized service lines that are or ever were downstream of an LSL.

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<p><b>LSL-Related Outreach:</b></p> <ul style="list-style-type: none"> <li>• When water system plans to replace the portion it owns, it must offer to replace customer-owned portion at owner’s expense.</li> <li>• If system replaces its portion only:               <ul style="list-style-type: none"> <li>○ Provide notification to affected residences within 45 days prior to replacement on possible elevated short-term lead levels and measures to minimize exposure.</li> <li>○ Include offer to collect lead tap sample within 72 hours of replacement.</li> <li>○ Provide test results within 3 business days after receiving results.</li> </ul> </li> </ul>	<p><b>LSL-Related Outreach:</b></p> <ul style="list-style-type: none"> <li>• Inform consumers annually that they are served by LSL or lead status unknown service line.</li> <li>• Systems subject to goal-based program must:               <ul style="list-style-type: none"> <li>○ Conduct targeted outreach that encourages consumers with LSLs to participate in the LSLR program.</li> <li>○ Conduct an additional outreach activity if they fail to meet their goal.</li> </ul> </li> <li>○ Systems subject to mandatory LSLR include information on LSLR program in public education (PE) materials that are provided in response to P90 &gt; AL.</li> </ul>
<b><i>Small System Flexibility</i></b>	
<p>No provisions for systems to elect an alternative treatment approach but sets specific requirements for CCT and LSLR.</p>	<p>Allows CWSs serving ≤ 10,000 people and all NTNCWSs with P90 &gt; 10 µg/L to select their approach to address lead with primacy agency approval:</p> <ul style="list-style-type: none"> <li>• Systems can choose CCT, LSLR, provision and maintenance of point-of-use devices; or replace all lead-bearing plumbing materials.</li> </ul>

CURRENT LCR	FINAL REVISED LCRR
<ul style="list-style-type: none"> <li>• All CWSs must provide education material in the annual Consumer Confidence Report (CCR).</li> <li>• Systems with P90 &gt; AL must provide PE to customers about lead sources, health effects, measures to reduce lead exposure, and additional information sources.</li> <li>• Systems must provide lead consumer notice to individuals served at tested taps within 30 days of learning results.</li> <li>• Customers can contact the CWS to get PE materials translated in other languages.</li> </ul>	<ul style="list-style-type: none"> <li>• CWSs must provide updated health effects language in all PE materials and the CCR.               <ul style="list-style-type: none"> <li>○ Customers can contact the CWS to get PE materials translated in other languages.</li> </ul> </li> <li>• All CWSs are required to include information on how to access the LSL inventory and how to access the results of all tap sampling in the CCR.</li> <li>• Revises the mandatory health effects language to improve accuracy and clarity.</li> <li>• If P90 &gt; AL:               <ul style="list-style-type: none"> <li>○ Current PE requirements apply.</li> <li>○ Systems must notify consumers of P90 &gt; AL within 24 hours.</li> </ul> </li> <li>• In addition, CWSs must:               <ul style="list-style-type: none"> <li>○ Deliver notice and educational materials to consumers during water-related work that could disturb LSLs.</li> <li>○ Provide information to local and state health agencies.</li> <li>○ Provide lead consumer notice to consumers whose individual tap sample is &gt; 15 µg/L as soon as practicable but no later than 3 days.</li> </ul> </li> </ul> <p><i>Also see LSL-Related Outreach section of table.</i></p>
<p>Systems on a <b>reduced</b> tap monitoring schedule must obtain prior primacy agency approval before changing their source or treatment.</p>	<p>Systems on <b>any</b> tap monitoring schedule must obtain prior primacy agency approval before changing their source or treatment. These systems must also conduct tap monitoring biannually.</p>
<ul style="list-style-type: none"> <li>• Periodic source water monitoring is required for systems with:               <ul style="list-style-type: none"> <li>○ Source water treatment; or</li> <li>○ P90 &gt; AL and no source water treatment.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Primacy Agencies can waive continued source water monitoring if the:               <ul style="list-style-type: none"> <li>○ System has already conducted source water monitoring for a previous P90 &gt; AL;</li> <li>○ primacy agency has determined that source water treatment is not required; <i>and</i></li> </ul> </li> </ul>

CURRENT LCR	FINAL REVISED LCRR
<ul style="list-style-type: none"> <li>• Does not include separate testing and education program for CWSs at schools and child care facilities.</li> <li>• Schools and child cares that are classified as NTNCWSs must sample for lead and copper.</li> </ul>	<ul style="list-style-type: none"> <li>○ System has not added any new water sources.</li> <li>• CWS must conduct sampling at 20% of elementary schools and 20% of child care facilities per year and conduct sampling at secondary schools on request for 1 testing cycle (5 years) and conduct sampling on request of all schools and child care facilities thereafter.</li> <li>• Sample results and PE must be provided to each sampled school/child care, primacy agency and local or state health department.</li> <li>• Excludes facilities built or replaced all plumbing after January 1, 2014.</li> </ul>
<p>Primacy Agencies must report information to EPA that includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• All P90 levels for systems serving &gt; 3,300 people, and only levels &gt; 15 µg/L for smaller systems.</li> <li>• Systems that are required to initiate LSLR and the date replacement must begin.</li> <li>• Systems for which optimal corrosion control treatment (OCCT) has been designated.</li> </ul>	<p>Expands current requirements to include:</p> <ul style="list-style-type: none"> <li>• All P90 values for all system sizes.</li> <li>• The current number of LSLs and lead status unknown service lines for every water system.</li> <li>• OCCT status of all systems including primacy agency-specified OWQPs.</li> </ul>