Lead and Copper Rule: A Quick Reference Guide

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Safe Drinking Water

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Lead and Copper Rule: A Quick Reference Guide

Overview of the Rule	
Title	Lead and Copper Rule
Purpose	Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.
General Description	Establishes an action level (AL) of **0.015 mg/L for lead** and **1.3 mg/L for copper** based on the 90th percentile level of tap water samples. An AL exceedance is not a violation but can trigger other requirements that include water quality parameter (WQP) monitoring, corrosion control treatment (CCT), source water monitoring/treatment, public education (PE) and lead service line replacement (LSLR).
Applicability	All community water systems (CWSs) and nontransient noncommunity water systems (NTNCWSs) are subject to the LCR requirements.

Public Health Benefits	
Implementation of the LCR has resulted in	• Reduction in risk of exposure to Pb that can cause damage to brain, red blood cells, and kidneys, especially for young children and pregnant women. • Reduction in risk of exposure to Cu that can cause stomach and intestinal distress, liver or kidney damage, and complications of Wilson's disease in genetically predisposed people.

Consumer Tap Notice

Within 30 days of learning the results, all systems must deliver a consumer tap notice of the lead tap water results to persons served by the water at sites that are sampled under 25 Pa. Code §109.1103. Water systems can use the "Instructions for Consumer Notice of Tap Results" (3900-FM-BSDW0209) located at: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3239

Within 3 months of the end of the monitoring period in which lead tap monitoring was conducted, a water supplier must submit a sample copy of the consumer notice along with a certification form (3900-FM-BSDW0205) that the notices were distributed by mail or by another method approved by DEP.

This certification form is located at: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3216

Major Monitoring Provisions	
Lead and Copper Tap	
Applicability	• All CWSs and NTNCWSs.
Initial	• CWSs and NTNCWSs must collect first-draw samples at taps in homes/building that are at high risk of Pb/Cu contamination as identified in 25 Pa. Code §109.1103(g)(2). • Number of samples is based on system size (see Table 1). • Systems must conduct monitoring every 6 months unless they qualify for reduced monitoring.
Reduced	• See Table 1 for sample number and Table 2 for criteria.
Water Quality Parameters (WQPs)	
Applicability	• Systems serving more than 50,000 people. • Systems serving 50,000 or less people during monitoring periods in which either AL is exceeded.
Initial	• Two sets of WQP samples are collected at distribution sites every 6 months. • One set of WQP samples is collected at each entry point every 6 months prior to CCT installation, then every 2 weeks.
Reduced	• See Table 1 for number of samples and page 4 for criteria for reduced distribution monitoring. Entry point monitoring cannot be reduced.
Source Water Monitoring	
Applicability	• Systems that exceed Pb or Cu AL.
Purpose	• Determine contribution from source water to total tap water Pb and Cu levels and need for source water treatment.
Timing	• One set of samples at each entry point for parameter that exceeded the AL within 6 months of first AL exceedance.

Table 1: Lead and Copper Tap and WQP Distribution Monitoring					
Size Category	System Size (population served)	Number of Pb/Cu Tap Sample Sites		Number of WQP Distribution Sites (2 sets at each site)	
		Initial	Reduced	Initial	Reduced
Large	>100,000	100	50	25	10
	50,001 – 100K	60	30	10	7
Medium	10,001 – 50K	60	30	10	N/A
	3,301 – 10K	40	20	3	N/A
Small	501 – 3,300	20	10	2	N/A
	101 - 500	10	5	1	N/A
	100 or fewer	5	5	1	N/A

Table 2: Criteria for Reduced Pb/Cu Tap Monitoring	
Annual	1. Small and medium systems that meet both ALs for 2 consecutive 6-month monitoring periods; or 2. Any system that has installed CCT and meets both ALs for 2 consecutive 6-month monitoring periods and maintains the range of optimal WQP performance level requirements (PLRs).
Triennial	1. Small and medium systems that meet both ALs for 3 consecutive years of monitoring, including initial monitoring; or 2. Any system that has installed CCT and meets both ALs for 3 consecutive years of 6-month or annual monitoring periods **and** maintains the range of optimal WQP PLRs for 3 consecutive years; or 3. Any system with 90th percentile Pb and Cu levels of ≤ 0.005 mg/L and ≤ 0.65 mg/L, respectively, for 2 consecutive 6-month monitoring periods.
9 Years	Small systems that meet the materials and monitoring criteria found under 25 Pa. Code §109.1103(k) may apply to DEP for a waiver.

Treatment Technique and Sampling Requirements if the AL is exceeded*	
*Based on the 90th percentile value. Refer to 25 Pa. Code §109.1102(a)(4) for computation steps.	
Water Quality Parameter (WQP)	
Applicability	Refer to page 2.
Parameters	• pH, alkalinity, calcium (*initial only, unless calcium carbonate stabilization is used*), conductivity (*initial monitoring only*), orthophosphate (if inhibitor is phosphate-based), silica (if inhibitor is silica-based, and temperature (*initial monitoring only*).
Frequency	• Systems installing CCT must conduct follow-up monitoring for 2 consecutive 6-month monitoring periods. • WQP distribution monitoring is conducted every 6 months and entry point monitoring is conducted every 2 weeks. • After follow-up monitoring, DEP will designate optimal CCT WQP PLRs.
Reduced Distribution Monitoring	• Collect at reduced number of sampling sites (Table 1) if a system maintains the range of WQP performance requirements for 2 consecutive 6-month monitoring periods. • Reduce frequency from 6-month monitoring to **annual** if WQP PLRs are met during 3 consecutive years of monitoring. • Reduce frequency from annual to **triennial** if during 2 consecutive 6-month monitoring periods the WQP PLRs are met **AND** the 90th percentile Pb and Cu levels are ≤ 0.005 mg/L and ≤ 0.65 mg/L, respectively.
Corrosion Control Treatment (CCT)	
Applicability	• All large systems • Small and medium systems that exceed either AL; may stop CCT steps if both ALs are met during 2 consecutive 6-month monitoring periods prior to approval to construct CCT facilities; but, must resume CCT if subsequently exceed either AL.
CCT Compliance Schedule	All activities begin from the end of the monitoring period in which the AL was exceeded: • Submit a CCT feasibility study within 18 months. • Submit a permit application within 30 months. • Initiate construction or modification of CCT facilities within 48 months. • Complete construction or modification of CCT facilities within 60 months.
Follow-up Monitoring & WQP PLRs	• Conduct 2 consecutive 6-month monitoring periods of Pb/Cu tap and WQP monitoring. • Within 30 days of end of follow-up monitoring, submit request to DEP to designate WQP PLRs.

Treatment Technique Requirement if the Lead AL is exceeded*	
*Based on the 90th percentile value. Refer to 25 Pa. Code §109.1102(a)(4) for computation steps.	
Lead Public Education (PE)	
Applicability	• Systems that exceed the Pb AL.
Purpose	• Educates consumers about lead health effects, sources, and steps to minimize exposure.
PE Material Content	• Must meet EPA requirements established under 40 CFR 141.85(a)(1) and (2). EPA has developed numerous documents and PE material templates that are located at this site: https://www.epa.gov/dwreginfo/lead-and-copper-rule-compliance-help-public-water-systems DEP has a CWS lead PE pamphlet template located at this site: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3242 NTNCWSs and CWSs that receive DEP approval to follow the NTNCWSs' delivery methods may use the "Instructions & Template for NTNCWSs Lead PE Poster and Pamphlet" (3930-FM-BSDW0137) located at this site: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3244
Delivery Method	• Systems must submit copies of PE materials to DEP prior to delivery. • CWSs: deliver materials to bill-paying customers and post lead information on water bills, work in concert with local health agencies to reach "at-risk" populations (children, pregnant women), deliver to other organizations serving "at-risk" populations, provide press releases, include new outreach activities from 25 Pa. Code §109.1104(a)(2)(i)(H), and post PE materials to website if system serves > 100,000 people. • NTNCWSs: Posting and distribution to all customers (can be electronic).
Timing	• Within 60 days after the end of the monitoring period in which Pb AL was exceeded if not already delivering PE. • Repeat annually except: quarterly water bill inserts, press releases twice a year and continuous web posting. • Discontinue whenever Pb AL is met; but, must resume PE program if subsequent Pb AL is exceeded.

Treatment Technique Requirement if the Lead AL is exceeded*	
*Based on the 90th percentile value. Refer to 25 Pa. Code §109.1102(a)(4) for computation steps.	
Lead Service Line Replacement (LSLR)	
Applicability	• Systems that exceed Pb AL after installing CCT. • Can discontinue LSLR whenever Pb AL is met during 2 consecutive 6-month monitoring periods. • Must resume LSLR for subsequent Pb AL exceedance.
Monitoring	• Optional: Sample from LSL to determine if line must be replaced. If all samples are ≤ 0.015 mg/L, line is considered "replaced through testing"; however, must reconsider these lines if Pb AL is subsequently exceeded. • Required: Sample from any partial LSLs replacements to determine impact on Pb levels.
Replacement	• Must replace at least 7% of LSLs annually; DEP may require a system to replace lines on a shorter schedule when it is feasible.
Partial LSL	• Notify residents at least 45 days prior to replacement about potential for increased Pb levels. • Collect partial LSL Pb sample within 72 hours of replacement and provide results to the owner and residents within 3 days of receiving the results.

Additional Resources	
DEP LCR web page	This page includes many links to various LCR resources. www.dep.pa.gov/lead_copper_rule
Subchapter K of Chapter 109	Subchapter K contains all the Lead and Copper Rule requirements for Pennsylvania public water systems. http://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter109/subchapKtoc.html&d=reduce
EPA LCR documents	This page provides comprehensive technical guidance documents for all aspects of the Federal Lead and Copper Rule. https://www.epa.gov/dwreginfo/lead-and-copper-rule

For more information visit
https://www.dep.pa.gov/Business/Water/BureauSafeDrinkingWater/DrinkingWaterMgmt/Regulations/Pages/Lead-and-Copper-Rule.aspx