

Safe Drinking Water Act Regulatory Compliance Efforts by the Portland Water Bureau

Briefing Overview for the Public Utility Board April 4, 2017

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Regulatory Update: Lead and Copper Rule

Background

The EPA published the LCR to minimize lead and copper in drinking water. The LCR addresses both lead and copper levels in the source water as well as those caused by corrosion of distribution and household pipes. The rule established a maximum contaminant level goal (MCLG) of zero for lead in drinking water and a treatment technique that included requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. The LCR requires that all large public water systems install Optimized Corrosion Control Treatment (OCCT).

Portland Compliance with the Lead and Copper Rule

The Portland Water Bureau (PWB) conducted initial LCR sampling in Spring and Fall 1992. The lead action level was exceeded in both rounds of monitoring.

PWB completed a corrosion control study in May 1994. In addition to evaluating the required corrosion control treatments of adjusting alkalinity, pH calcium hardness, and the addition of a phosphate or silicate based corrosion inhibitor, Portland also evaluated the effectiveness of non-chemical measures.

The corrosion control study set an optimized pH and alkalinity target of 9.0-9.5 and 20 mg/L as CaCO₃, respectively for Portland's distribution system. However, several constraints emerged during the corrosion control study leading City Council to direct PWB to consider non-chemical strategies. Based on the results of the corrosion control study, the Portland Water Bureau recommended to the State a combined limited chemical and non-chemical corrosion control compliance strategy. This strategy is known as the Lead Hazard Reduction Program (LHRP) and consists of four components:

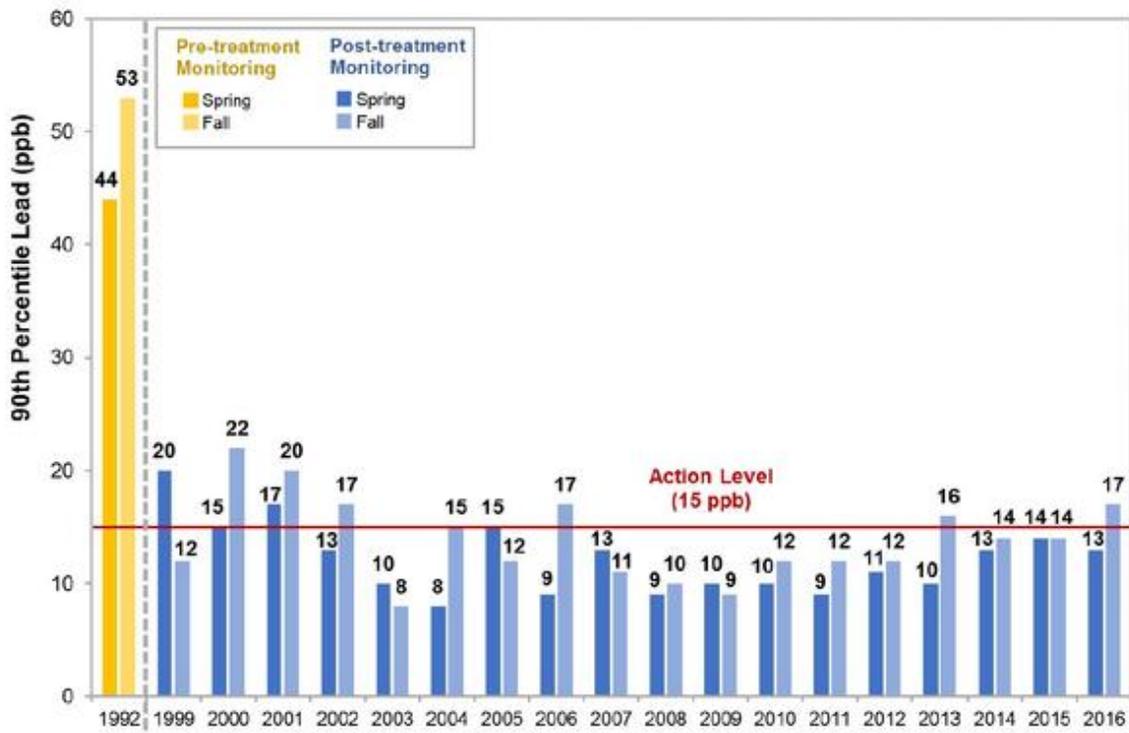
1. **Partial Corrosion Control Treatment & Monitoring:** Includes limited pH adjustment with sodium hydroxide and subsequent monitoring of water quality parameters. The initial adjustment to pH 7.5 occurred in 1997, followed by an increase to 7.8 in 2002, 8.0 in 2005, and 8.1 in 2017. Monitoring includes twice a year monitoring at high-risk homes and quarterly distribution system monitoring.
2. **Home Lead Hazard Reduction:** provides funds for lead assessment and remediation in eligible homes in the Portland Metro area.
3. **Lead in Water Education and Testing Program (LWET):** provides expanded free lead in water testing to all homes in participating water systems in the Bull Run Service Area. Outreach is targeted to homes built from 1970-1985 having children ages six and under or pregnant women in the home. Education targets easy steps to reduce exposure to lead in plumbing.
4. **Public Education and Outreach:** Recognizing that lead in housing is a major contributor to childhood lead poisoning, education and outreach is performed to increase awareness of lead hazards from all sources, and targeting high risk populations. The program awards grants to community partners to conduct education and outreach activities about lead hazards. Grant partners have included Multnomah County Health Department, Portland Parks, Portland Public Schools, Community Energy Project, Fair Housing Council, Community Alliance of Tenants, Growing Gardens, and others.

In November 1997, the State deemed the LHRP as equivalent optimized corrosion control under the LCR.

Future Compliance

While the State has deemed the PWB to be in compliance with the LCR, results from regulatory monitoring have traditionally been near, and occasionally above the action level for lead. This was exceeded most recently in Fall 2014 and 2016. These exceedances combined with recent changes to the drinking water system resulted in re-evaluation of how Portland complies with the LCR. To learn more about potential ways to further reduce lead in water levels, a water quality corrosion control study was recently performed. This study concluded that additional corrosion control treatment is likely the most effective means to further reduce lead in water levels. As a result, in September 2016, the Portland Water Bureau proposed a compliance schedule to the Oregon Health Authority to construct and install additional corrosion control treatment. The Portland Water Bureau anticipates this to be completed by Spring 2022. The first step is a Corrosion Treatment Pilot, which began in March 2017.

Portland Joint Monitoring 90th Percentile Lead Levels



Action	PWB's Proposed Schedule
Complete WQ Corrosion Study	3/31/17
Review study data and agree with OHA on treatment options; submit recommendations to city council for consideration	3/17
Submit WQ Corrosion Study final report to OHA	4/5/17
Submit CCT pilot study plan to OHA	6/30/17
Implement recommendations to improve the LHRP elements as identified by OHA	12/31/17
<i>Hire design consultant and begin planning and preliminary design</i>	9/1/17
Submit CCT pilot study results and treatment	7/31/18
<i>Begin improved Corrosion Control Treatment facility detailed design</i>	8/1/18
Submit improved CCT plans and specs to OHA	4/30/20
Begin CCT facility construction	8/1/20
Complete improved CCT facility	4/30/22