

Lead and Copper Rule for Drinking Water

Introduction to the Lead and Copper Rule

In 1991, the United States Environmental Protection Agency (USEPA) published a regulation to control lead and copper levels in drinking water. This regulation is known as the Lead and Copper Rule (also referred to as the LCR). The purpose for this rule is to protect public health by minimizing lead and copper concentrations in drinking water. Since 1991, the LCR has undergone several revisions and the USEPA is currently considering long term revisions to the rule in order to improve public health protection by making substantive changes to the rule and to streamline the rule requirements.

All community water systems are subject to the LCR. Lead and copper enter drinking water mainly from the corrosion of plumbing materials containing both metals. This rule establishes monitoring provisions and an action level of 15 ppb (part per billion) for lead and 1.3 ppm (part per million) for copper based on the 90th percentile level from the analysis of all tap water samples. The 90th percentile means 90% of the water sample results are smaller than the action level. An exceedance of the action level is not a violation, but can trigger other requirements for a community water system that may include water quality parameter monitoring, corrosion control treatment, source water monitoring/treatment, public education and lead service line replacement.

For more information on LCR, such as the rule summary, the rule history and additional resources, please visit EPA's website at <https://www.epa.gov/dwreginfo/lead-and-copper-rule#additional-resources>

City of Valparaiso's History of Lead and Copper Monitoring

The Valparaiso Water Department started to monitor and test for lead and copper concentrations in our drinking water in 1992. Since then, at least 30 water samples have been taken by the Department on an annual or triennial schedule depending on the water monitoring framework set forth by Indiana Department of Environmental Management (IDEM). Shortly after that, orthophosphate was added into the Department's water treatment process. Orthophosphate serves as a corrosion inhibitor as it forms a protective layer on the interior walls of the water pipe and therefore prevents the lead and copper in the water pipe from leaching into our drinking water. Figures 1 and 2 show the lead and copper levels at the customers' water taps over the past years, respectively. Please note that the high copper levels observed in 2011 were caused by the replacement of water line in some buildings. Old water lines were replaced with new copper lines shortly before the water samples were taken. There wasn't enough time for the corrosion inhibiting chemicals added in the water to form protective film on the inside walls of copper lines. As a result, copper leached out into the water and caused high level readings for those buildings tested in 2011.

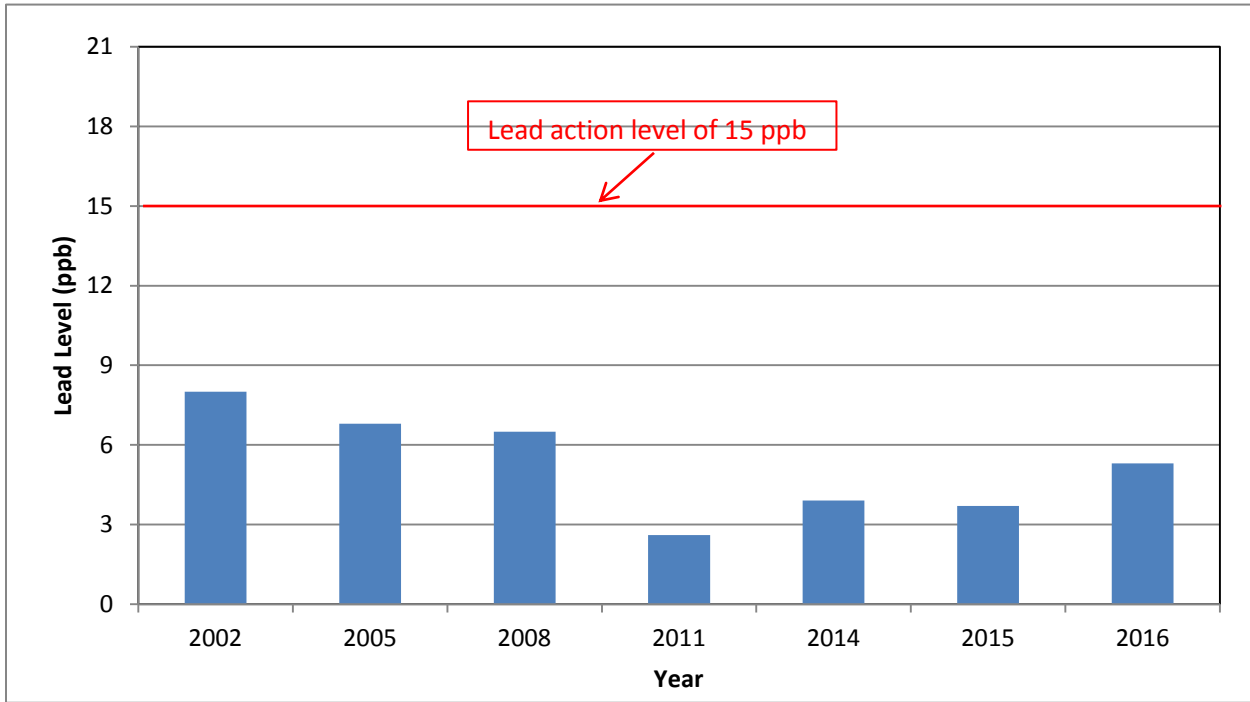


Figure 1: Valparaiso Water Department Measured Lead Level (ppb) at Customers Water Taps Since 2002.

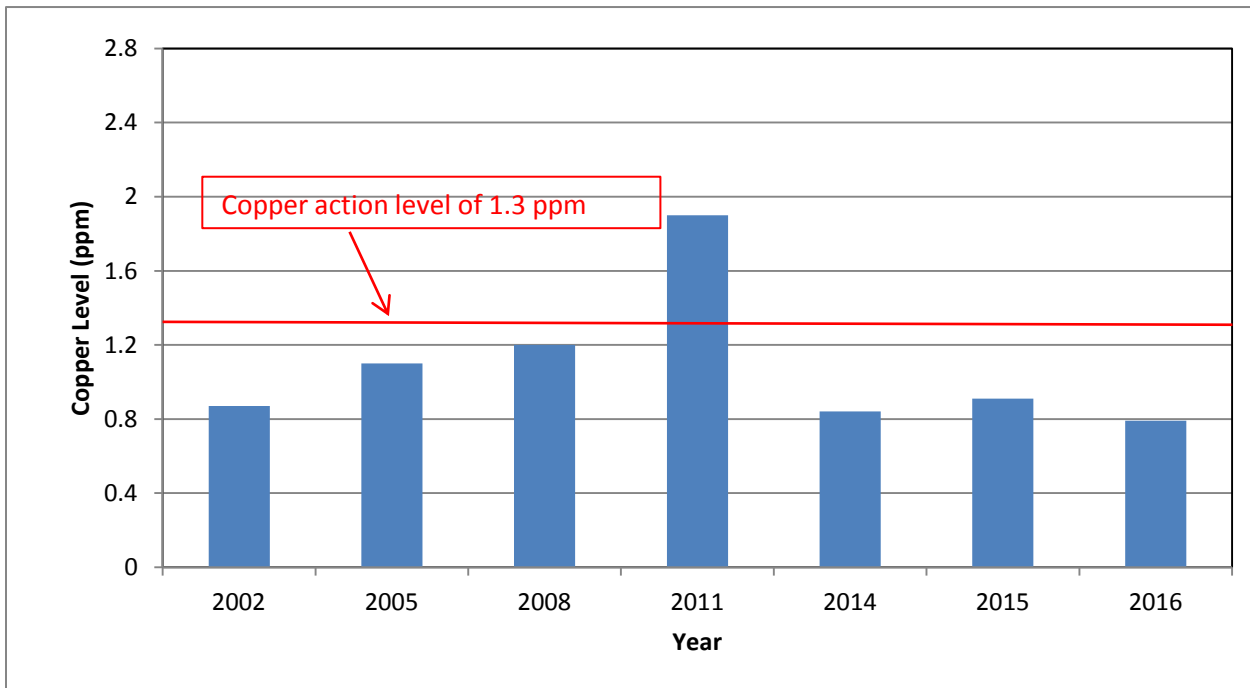


Figure 2: Valparaiso Water Department Measured Copper Level (ppm) at Customers Water Taps Since 2002. The high level of copper observed in 2011 was mainly caused by the new copper water lines installed in those buildings.

Based on available records, the City of Valparaiso's water system originally contained 1,912 lead service lines. Since 1983, the Water Department has replaced 209 lead service lines within our drinking water system have been replaced. Currently, there are 690 lead service lines still active within our water system. The majority of those lead service lines are located in the older parts of the City's residential and downtown areas. Figure 3 shows the locations of those known lead service lines in our water distribution system.

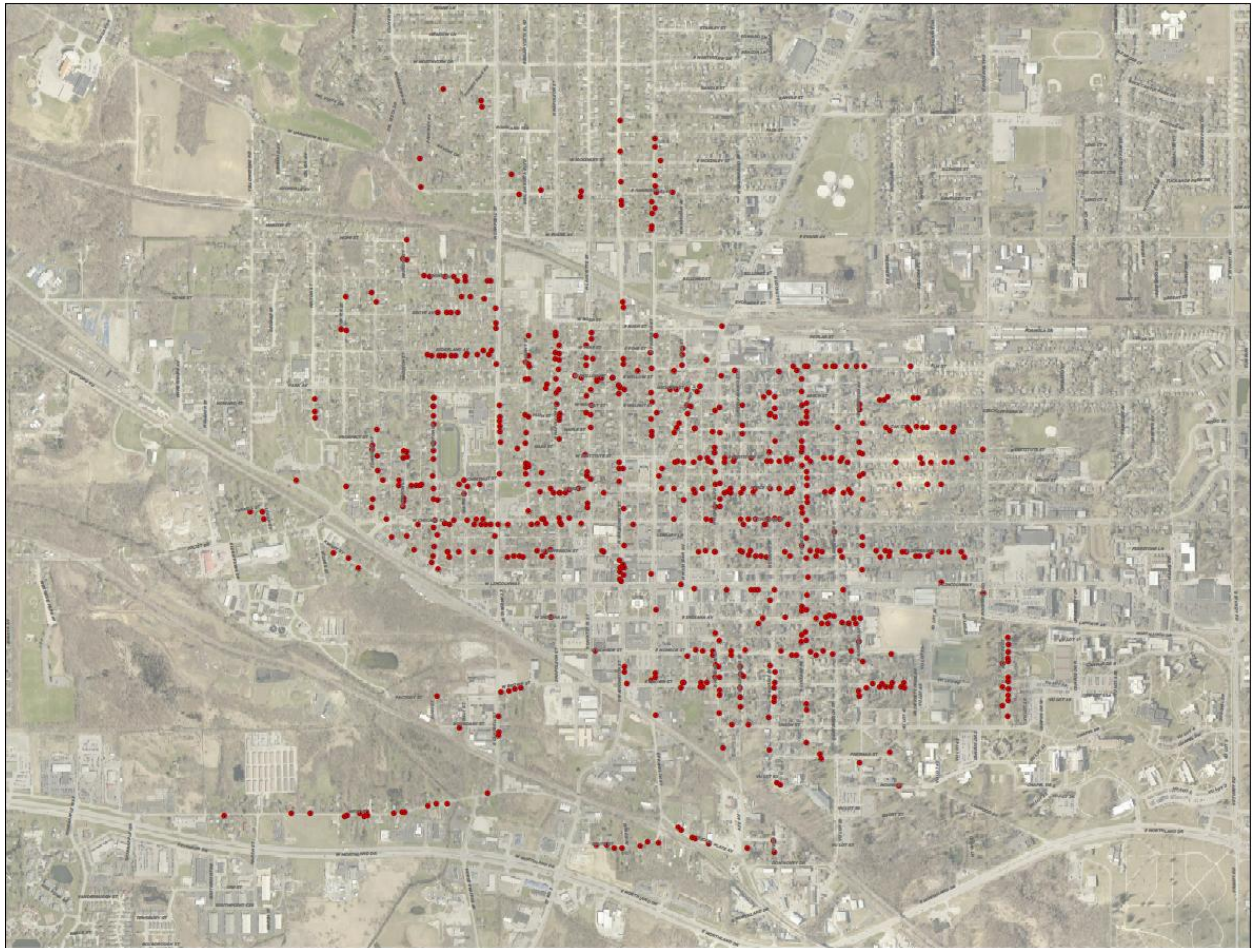


Figure 3: The known active lead service lines in City of Valparaiso's water distribution system.

Please note that these listed lead service lines shown in Figure 3 are the portions owned by the Valparaiso Water Department, which typically measure from the water mains to the shut off valves. The portions from the shut off valves all the way to customers' houses are owned and maintained by the customers.

Figure 4 demonstrates the typical service line layout for your reference. Valparaiso Water Department doesn't have a record of customers' portions of the service lines. If you are not sure but would like to know whether there is lead service line in your house, a licensed plumber may be able to help you.

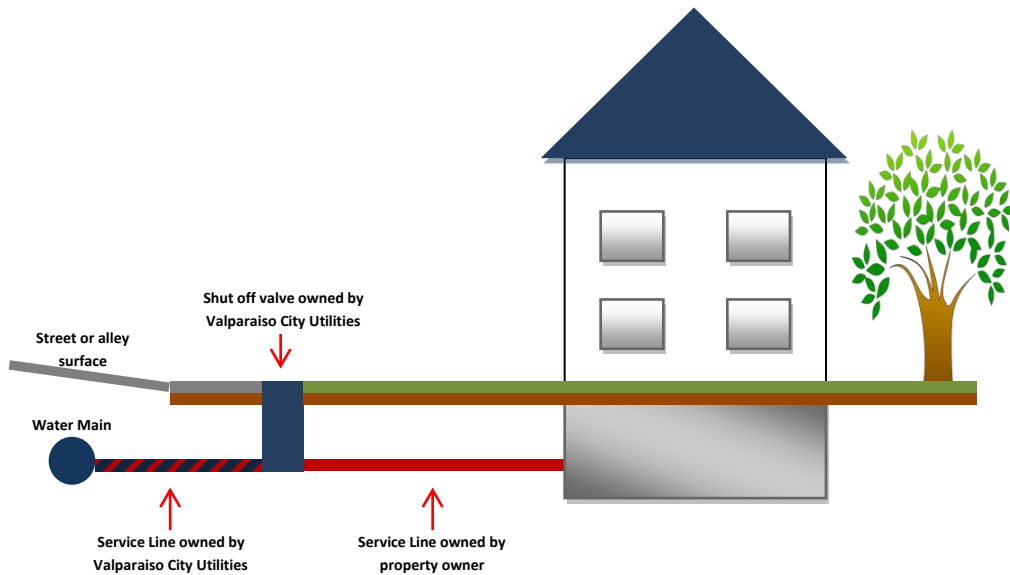


Figure 4: The schematic of water service lines that are owned by Valparaiso Water Department and by customers.

Valparaiso Water Department's Best Practices to Provide Safe Drinking Water

To provide high quality water to the customers served by the Valparaiso Water Department and to minimize the levels of lead in our drinking water in the future, the Department will continue with the following best practices:

1. Monitoring lead levels in our drinking water on a regular basis, as required by the IDEM, through the testing of water samples collected from various locations throughout the City of Valparaiso.
2. Continuing the addition of orthophosphate at both water treatment plants so that the water pipes in the City's water distribution system are protected from corrosion.
3. The current practice of periodically replacing lead service lines as found by the Department may be formalized into an ongoing replacement program in the near future which identifies the locations of suspected lead service lines and to replace them once confirmed.
4. Public education and outreach. The Valparaiso Water Department has been actively communicating with our customers on the water quality via public notice, news paper and a City newsletter. Figure 5 showing an article about the lead levels in our water is one example of such efforts. It was published in the City newsletter mailed out to all City residents.

Water Watch

No Worries About Lead Levels in Valpo Water

The recent water crisis in Flint, Michigan has people nationwide wondering about the safety of the water they drink. "As a water utility, we monitor Valparaiso's water quality closely and can assure our customers that the treated water entering the city's water distribution system is safe to drink," said Utilities Director Steve Poulos. Here are some frequently asked questions surrounding water regulation and lead levels:

How do we know that Valpo's water doesn't contain dangerous amounts of lead?
Valparaiso tests the treated water supply, complying with the United States Environmental Protection Agency (USEPA), which monitors all community water systems. According to the USEPA, a community is subject to additional monitoring and further action if the lead level measures at 15 parts per billion or higher. Valparaiso's levels are consistently far below this.

Why is lead dangerous?
Elevated levels of lead can cause serious health problems, especially for pregnant women and young children.

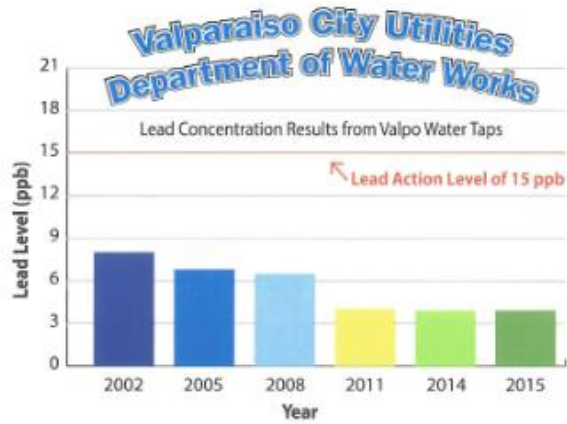
How does lead get into water?
Lead enters drinking water mainly from the corrosion of plumbing materials containing lead.

What does Valpo do to avoid lead contamination?
As part of the water treatment process, the city adds orthophosphate to the water as a corrosion inhibitor, forming a protective layer on the interior walls of the water pipe to help prevent lead in the plumbing from leaching into the water. The city also continues to work at identifying and replacing the few remaining (estimated at 5 percent) service lines that may contain lead.

What about the plumbing within my home?
Valparaiso City Utilities is responsible for providing high quality drinking water to each home, but cannot control the variety of materials used in home plumbing components. If your home contains lead pipes, you can minimize your potential

lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking (particularly when your water has been sitting for several hours).

How can I test the water in my home?
If you are concerned about possible lead from the pipes in your home, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available on the United States EPA website at <http://www.epa.gov/safewater/lead>. You can also find our 2016 Consumer Confidence Report at www.valparaisoutilities.org.



Valparaiso continually monitors lead levels in the city's treated water supply. Lead levels continue to fall as infrastructure is replaced.

Figure 5: An article published in a City newsletter talking about lead levels in the City's drinking water.

Testing Schools and Child Care Centers for Lead in Drinking Water

Testing schools and child care centers for lead in drinking water is recommended, but not required. US EPA has published specific guidelines for schools and child care centers to test for lead in the drinking water. To find out more information regarding where and how to sample, please visit the EPA's website at <https://www.epa.gov/dwreginfo/testing-schools-and-child-care-centers-lead-drinking-water>