



RICK SNYDER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



C. HEIDI GRETHER  
DIRECTOR

August 15, 2016

VIA E-MAIL

The Honorable Karen Williams Weaver  
Mayor of Flint  
1101 South Saginaw Street  
Flint, Michigan 48502

WSSN: 02310  
City of Flint

Dear Mayor Weaver:

SUBJECT: City of Flint  
Lead and Copper Monitoring - Action Level (AL) Exceedance

The city of Flint (City) exceeded the AL for lead during the most recent round of lead and copper monitoring of drinking water taps from January 1 to June 30, 2016, as summarized below:

Contaminant	AL	MCLG*	90 <sup>th</sup> Percentile Value	Number of Samples Above AL	Typical Source of Contaminant
Lead	15 parts per billion (ppb)	0	20	88	Corrosion of household plumbing systems; service lines that may contain lead; Erosion of natural deposits
Copper	1,300 ppb	1,300	170	7	Corrosion of household plumbing systems; Erosion of natural deposit

\*MCLG: Maximum contaminant level goal means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

An AL exceedance is not a violation of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), but it does trigger other requirements under Act 399. These include source water monitoring, public education, customer requested supplemental sampling, and lead service line replacement.

**Sample Reporting and 90<sup>th</sup> Percentile Calculation**

The Michigan Department of Environmental Quality (MDEQ) received your Lead and Copper Report form on July 8, 2016. Included with the form were samples collected during the January to June 2016 monitoring period from sites verified as meeting Tier 1 criteria, meaning they were collected from residential sites confirmed as having lead service lines or copper plumbing with lead solder installed between 1983 and 1988. After exclusion of some sample results from compliance reporting due to their invalidation under the Lead and Copper Rule (LCR), for reasons including sample hold time exceedances and collection after a filter, the 661 remaining samples were listed on the submitted form as required. Following further clarification from the U.S. Environmental Protection Agency (EPA), including concurrence on the MDEQ's rationale in calculating the 90<sup>th</sup> percentile, the MDEQ performed additional data quality review and identified more samples requiring invalidation. Invalidated samples were not used in calculating the 90<sup>th</sup>

percentile value since they failed to meet LCR compliance sampling requirements. The remaining 633 verified sample results were used to calculate the 90<sup>th</sup> percentile value.

### **Deliver Customer Notice of Lead Result**

Within 30 days of learning the results, water supplies must provide individual lead tap results to the people who receive water from sites that were sampled, even if lead was not detected. However, in Flint, results were being provided directly to the sampling address as well as being posted on a public Web site. Regardless of the lead result or even if the resident had sampled, all city customers were provided with a filter for their kitchen tap that was certified for the removal of lead, and they were being advised to not drink the water from any other tap. Residents also had access to replacement filters or bottled water, so all exposure to lead through drinking water should have been eliminated.

### **Distribute Public Education (PE)**

In addition to providing the lead consumer notice, the City is required to deliver PE materials to all consumers by **August 29, 2016**, and to repeat this process each year until the lead AL is no longer exceeded. You are also encouraged to maintain PE materials on your Web site. This material is intended to educate consumers about lead health effects, lead sources, and steps to minimize exposure.

We realize there has been widespread dissemination of educational material on an unprecedented scale throughout Flint during the past 10 months. There have been press releases, public meetings, community events, and national news coverage of the lead levels in Flint and the precautionary measures residents were given to reduce their exposure to lead through drinking water. However, because the lead AL has been exceeded in the latest monitoring period, the City must provide formal PE to all customers. In addition, the City shall offer to sample the tap water of any customer who requests it.

Enclosed is a template you may use to provide the latest information to your consumers. The PE materials must include information about the recent lead AL exceedance, information about what the City is doing to reduce lead levels, information about lead service lines in the City's distribution system, and information about the history of lead levels in the City's water supply. The MDEQ must approve the City's PE material prior to dissemination. The City must submit final PE materials to the MDEQ for review and approval by **August 18, 2016**.

At least quarterly, provide the following statement on water bills until the lead AL is no longer exceeded: *"The City of Flint found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call the City of Flint at 810-787-6537 or visit [www.cityofflint.com](http://www.cityofflint.com)."*

Enclosed is a "Summary of Public Education Requirements and Certificate of Distribution." This serves as a checklist of PE activity requirements with a certification to return to the MDEQ by **September 8, 2016**, along with a sample copy of the PE material. Be sure to review the PE requirements carefully to ensure all required activities are conducted.

The City must continue PE activities until the lead AL has been met.

### **Correct the Problem**

The City must continue the supplemental corrosion control treatment to reduce the amount of lead from leaching into the drinking water. The City must also continue monitoring its corrosion

control treatment on a daily basis to ensure proper operation is maintained. In addition, the City must continue monitoring water quality throughout the distribution system to demonstrate the effectiveness of the City's corrosion control treatment. Finally, the City has a contract to initiate and develop a Distribution System Optimization Program over the next 8 to 9 months. Any further, long-term measures identified by this Program as necessary to maintain optimal corrosion control treatment should be implemented.

#### **Lead Service Line Replacement**

Water supplies that exceed the lead AL in compliance monitoring conducted after installing corrosion control treatment must also begin to replace lead service lines. You must identify the number of lead service lines in your community and replace a minimum of 7 percent of the original number of lead service lines each year. Lead service line replacement (LSLR) may be discontinued if your water supply is at or below the AL for two consecutive six-month monitoring periods.

By **September 30, 2016**, provide the MDEQ with your best estimate of the total number of lead service lines, including lead goosenecks, in your community. Please include the basis for your estimate with the submittal. You are required to replace at least 7 percent of those service lines by **June 30, 2017**. Failure to respond and adequately justify a lead service line estimate by the **September 30, 2016**, deadline will result in the MDEQ imposing a minimum number based on the MDEQ's best available data.

#### **Conduct Water Quality Parameter (WQP) Monitoring**

Continue to conduct WQP monitoring as required.

#### **Conduct Source Water Monitoring**

By **December 31, 2016**, collect one sample for lead and copper at the entry point to the distribution system. Repeat annually until both lead and copper ALs are met for two consecutive six-month monitoring periods.

#### **Lead and Copper Monitoring**

Your next round of lead and copper tap monitoring must be conducted **between July 1 and December 31, 2016**. You are required to collect a minimum of 60 tap samples from Tier 1 sample locations. Select the same sites used in previous monitoring periods unless sites no longer meet Tier 1 criteria. If a site no longer meets Tier 1 criteria, it must be replaced by another confirmed Tier 1 site with lead service lines and documentation must be provided to the MDEQ.

#### **Consumer Confidence Report (CCR)**

Include this AL exceedance in your CCR, which is due to our office, your customers, and the local health department by **July 1, 2017**. You may use the table format from page 1 of this letter.

Also, since the lead AL was exceeded, include the following health effects language: *"Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure."*

For additional information on CCR requirements, visit the MDEQ Web site at [www.michigan.gov/drinkingwater](http://www.michigan.gov/drinkingwater). Click on Community Water Supply Home Page and then the Consumer Confidence Report Rule link under Laws and Rules.

**Summary of Upcoming Requirements**

Complete By	Requirement	Comments
Ongoing	Collect WQP samples.	Continue to collect required WQP samples.
August 18, 2016	Submit PE materials to MDEQ for approval prior to dissemination.	MDEQ must approve PE content before it can be disseminated to customers.
August 29, 2016	Perform PE activities, including delivering PE materials to all consumers.	PE required activities are listed in enclosed template and checklist. Repeat every year until the lead AL is met in the most recent round of sampling.
At Least Quarterly	Include mandatory lead language on customer water bills at least quarterly.	See mandatory language above. Repeat quarterly until the lead AL is met in the most recent round of sampling.
September 8, 2016	Send MDEQ certification of PE compliance along with a sample copy of the materials delivered.	Sample certification enclosed. Required whenever PE is required.
September 30, 2016	Provide MDEQ a lead service line estimate on the number of lead service lines in the water system.	The estimate must include all lead service lines, which includes lead goosenecks. If deadline is not met, MDEQ will establish a minimum number for replacement.
December 31, 2016	Collect one lead and copper sample from each entry point to the distribution system.	Repeat every year until both ALs are met for one year.
Between July 1 and December 31, 2016	Collect at least 60 samples from Tier 1 sites within the distribution system and have them analyzed for lead and copper.	Report the results to the MDEQ and deliver the customer notice of individual lead results using the downloadable <i>Lead and Copper Report and Consumer Notice of Lead Result Certificate</i> .
June 30, 2017	Replace 7 percent of lead service lines.	Replace a minimum of 7 percent of lead service lines.
July 1, 2017	Report the 2016 AL exceedance in the CCR.	Specific lead health effects language must be included.

The Honorable Karen Williams Weaver  
Page 5  
August 15, 2016

Thank you for your prompt attention to this matter. We continue to offer assistance in implementing these regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Bryce Feighner". The signature is fluid and cursive, with a large initial "B" and "F".

Bryce Feighner, P.E., Chief  
Office of Drinking Water and Municipal Assistance  
517-284-6524

Enclosures

cc/enc: Mr. Robert Kaplan, Acting Regional Administrator, EPA, Region 5  
Brigadier General Mike McDaniel (Ret.), City of Flint  
Mr. Sylvester Jones, City of Flint  
Ms. JoLisa McDay, City of Flint  
Ms. C. Heidi Grether, Director, MDEQ  
Mr. Richard Baird, Governor's Office  
Mr. Jim Sygo, Chief Deputy Director, MDEQ  
Mr. George Krisztian, MDEQ



**DEPARTMENT OF PUBLIC WORKS  
AND UTILITIES  
Water Plant**

**Dr. Karen Weaver  
Mayor**

**Sylvester Jones Jr.  
City Administrator**

**JoLisa McDay  
Utilities Administrator**

**IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER**

*City of Flint found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this notice closely to see what you can do to reduce lead in your drinking water.*

Si desea una copia de este aviso en español, por favor llame al 810-787-6537 para tener uno enviado a usted. Una copia también está disponible en [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater).

**What happened? What is being done?**

From January through June 2016, lead tap sampling was conducted by residents throughout the city of Flint (City). In July the results from sampling locations that qualify as high-risk sites under United States Environmental Protection Agency (EPA) regulations were reviewed and used for calculating the 90<sup>th</sup> percentile. The lead 90<sup>th</sup> percentile value for this monitoring period was 20 parts per billion (ppb), which exceeds the federal action level of 15 ppb for lead. It should be noted that the most recent rounds of extended sentinel monitoring have shown a significant improvement in the system.

The City has been working to optimize corrosion control treatment in order to recoat the pipes to prevent lead from leaching into the water. The City will continue to optimize and maintain this treatment as required for all large systems under the Lead and Copper Rule.

The Michigan Department of Environmental Quality (MDEQ) and EPA Flint Water Response Team spent much of the last 6 months investigating homes in the City for lead service lines. Earlier this year, the City also participated in a pilot program to remove 33 lead service lines. Currently, the City has received funding to hire 3 contractors to begin removing more lead lines next month.

**Health Effects of Lead**

*Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.*

## Sources of Lead

Lead is a common metal found in the environment. Drinking water is one possible source of lead exposure. Other sources of lead exposure for most individuals are lead-based paint, lead-contaminated dust or soil, and some plumbing materials. In addition, lead can be found in certain types of pottery, pewter, fixtures, food, and cosmetics. Other sources include exposure in the work place and exposure from certain hobbies (lead can be carried on clothing or shoes).

Plumbing products, such as pipes and fixtures, may contain lead. Homes built before 1988 are more likely to have plumbing containing lead, but newer homes may also contain lead. Beginning in 2014, the law reduced the allowable level of lead in these products to a maximum of 0.25 percent to be labeled as "lead free." Older fixtures may contain higher levels of lead.

The water coming from the Lake Huron Water Treatment Plant of the Great Lakes Water Authority does not contain lead. Lead may enter drinking water when it is in contact with pipes or plumbing that contains lead for several hours.

The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

Don't forget about other sources of lead, such as lead paint, lead dust, and lead in soil. Wash your children's hands and toys often as they can come into contact with dirt and dust containing lead.

## Steps You Can Take to Reduce Your Exposure to Lead in Your Water

### ***1. Continue to use your NSF-certified filters on drinking water taps until further notice.***

Filtered water should be used for drinking, cooking, and washing fruits and vegetables. Read the package to make sure the filter is certified to meet NSF53, the NSF standard for particulate lead removal. Be sure to replace a filter device as often as the manufacturer recommends. Contact NSF International at 800-NSF-8010 or visit their Web site at [www.nsf.org](http://www.nsf.org) for water filter performance standards. You can pick up free water filters and replacement cartridges at any one of nine locations, open Monday through Saturday. You can visit [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater) or call 800-662-9278 to find the water resource location nearest you.

***2. Run your water to flush out lead.*** The longer water sits in your home's pipes, the more lead the water may contain. Even if you are not drinking your water, you should flush water through the faucets in your house to build up a protective coating in your pipes. This coating will help block lead from getting into your water. **Every morning, run unfiltered cold water through drinking water taps for at least five minutes to flush out pipes.**

***3. Use filtered water when preparing baby formula.*** Use filtered water from the cold water tap to make baby formula. Do not use hot water for mixing baby formula.

***4. Clean your faucet aerator.*** The aerator on the end of your faucet is a screen that will catch debris. This debris could include particles of lead. The aerator should be removed and cleaned at least every two weeks. Please visit [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater) for more information on cleaning faucet aerators.

**5. Do not boil water to remove lead.** Boiling water will not reduce lead levels.

**6. Get your child tested.** Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure. Please visit [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater) or call 800-662-9278 for more information.

**7. Test your water for lead.** Call us at 810-787-6537 to find out how to get your water tested for lead. Currently, the MDEQ Laboratory is providing free water testing to all residents of Flint. You can pick up and drop off a testing kit at any one of nine locations, open Monday through Saturday. You can visit [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater) or call 800-662-9278 to find the water resource location nearest you.

**8. Identify if your plumbing fixtures contain lead.** Most existing homes have leaded brass faucets unless they have been replaced since 2013. Any new connecting plumbing and fittings should also meet the 2014 lead-free definition. If you replace your faucet, buy a new one with pieces that meet the 2014 lead-free definition. These should be certified as lead-free by an independent testing agency. Learn more from the EPA's Publication Center at 800-490-9198 and ask for the document entitled "How to Identify Lead-Free Certification Marks for Drinking Water System & Plumbing Materials" (number 600F13153).

#### **For More Information**

*Call us at 810-787-6537 or visit our Web site at [www.cityofflint.com](http://www.cityofflint.com) or the State of Michigan Web site at [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater). For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at [www.epa.gov/lead](http://www.epa.gov/lead) or contact your healthcare provider.*

# Summary of Public Education (PE) Requirements and Certificate of Distribution

For Community Water Supplies That Exceed the Lead Action Level

Public education (PE) materials must be delivered within 60 days after the end of the monitoring period in which the lead exceedance occurred and repeated once every 12 months for as long as the lead action level is exceeded. Within 10 days after the end of the period in which PE is required, send documentation to the DEQ that contains:

- A demonstration that the water supply has delivered the PE materials that meet the content requirements and the delivery requirements.
- A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the water supply delivered PE materials during the period in which the water supply was required to perform PE tasks.

To meet this requirement, water supplies may use this checklist to document delivery activities. Send this checklist, or similar documentation, to the DEQ along with a sample copy of the PE material that was distributed.

1. Deliver PE printed materials (pamphlets, brochures, posters) to all bill-paying customers.  
Date delivered: \_\_\_\_\_

2. Provide the following message on or in each water bill (no less frequently than quarterly). "[Water Supply Name] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [Water Supply Name] or visit [insert Web site if available]."  
Dates water bills or other delivery mechanism delivered: \_\_\_\_\_

3. Partner with the local public health agency to reach at-risk consumers, even if the agency is not served by the water supply:  
a. Deliver PE materials to the local public health agency along with an informational notice encouraging them to distribute to potentially affected consumers.  
Date delivered to local public health agency: \_\_\_\_\_

b. Contact the local public health agency in person or by phone. If the agency provides a list of other organizations that serve the target population, deliver materials to those organizations, too, even if not served by the water supply.  
List of other organizations: \_\_\_\_\_

4. Deliver PE materials to the following facilities and organizations that are served by the water supply that are most likely to be visited regularly by pregnant women and children. Check all that apply and list the names of facilities and organizations:

- \_\_\_ Public and private schools or school boards: \_\_\_\_\_
- \_\_\_ Women Infants and Children (WIC) and Head Start programs: \_\_\_\_\_
- \_\_\_ Public and private hospitals and medical clinics: \_\_\_\_\_
- \_\_\_ Pediatricians: \_\_\_\_\_
- \_\_\_ Family planning clinics: \_\_\_\_\_
- \_\_\_ Local welfare agencies: \_\_\_\_\_

5. Make a good faith effort to locate the following organizations within the service area and deliver PE materials, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of the organizations from the local public health agencies, even if the agencies are not located within the water system service area. Check all organizations that apply and list the names of the organizations:

- Licensed childcare centers: \_\_\_\_\_
- Public and private preschools: \_\_\_\_\_
- Obstetricians-Gynecologists and Midwives: \_\_\_\_\_

6. Submit press release to newspapers and television and radio stations. List the newspapers and television and radio stations: \_\_\_\_\_

7. Conduct activities from the following general categories.

- For water supplies serving more than 3,300 people, conduct 3 activities from 1, 2, or 3 of the following general categories (for example, you may do 3 public service announcements or 3 public meetings if the DEQ allows).
- Check all that apply and note the dates that the activities are performed and their locations, if applicable.

- Public service announcements: \_\_\_\_\_
- Paid advertisements: \_\_\_\_\_
- Display information in public areas: \_\_\_\_\_
- Email to customers: \_\_\_\_\_
- Public meetings: \_\_\_\_\_
- Delivery to every household: \_\_\_\_\_
- Targeted individual customer contact: \_\_\_\_\_
- Provide materials directly to multi-family homes: \_\_\_\_\_
- Other methods approved by the DEQ: \_\_\_\_\_

8. Post material on the water supply's Web site. Web site address: \_\_\_\_\_

9. Certify. I affirm that PE material content and delivery requirements have been completed. I am enclosing a sample of the PE material we delivered. I understand that DEQ provided all customers with their sample results. With this PE content, the City has met the lead consumer notice requirements of the Lead and Copper Rule.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Water Supply Name

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Water Supply Serial Number (WSSN)

\_\_\_\_\_  
Title

Within 10 days of the end of the period in which PE is required, send a certification that requirements were met to the appropriate DEQ district office.