



CITY OF MILWAUKIE

# WATER QUALITY REPORT

Consumer Confidence Report 2022



## A Message to Milwaukie Water Customers

### City Council

Mayor Lisa Batey  
Desi Nicodemus  
Adam Khosroabadi  
Rebecca Stavenjord  
Robert Massey

Dear Milwaukie Water Customers,

Once again, we are pleased to announce that Milwaukie continued to provide residents clean, safe drinking water by meeting or exceeding all Federal Environmental Protection Agency and State of Oregon Health Authority (OHA) Standards for 2022. The past year has continued to be a challenge for all but Milwaukie Public Works continued to work hard at improving the city's infrastructure and natural systems, ensuring access to excellent services for all Milwaukie residents, and promoting a resilient and sustainable community for years to come.



This year the city will be participating in the Lead/Copper Rule Revisions, regulated by the EPA (Environmental Protection Agency). The city will be required to inventory all public and private service lines for material type. The goal is to locate and replace all lead service lines. By October 2024 the city must verify service line types by exposing the service line on the public and private side. The city has hired a consultant to compile all of the information and make sure the city will be in compliance. Milwaukie residents may receive a questionnaire asking for information on the home such as the age of house and service line type. We will be sharing more information in the future as it is available.

Providing our residents with a clean and reliable source of drinking water remains a top priority for the City of Milwaukie. Residents and businesses can help by lowering overall use of potable water to conserve water for future use and reduce impacts on the environment from unnecessarily pumping water from underground and managing the treatment of a larger volume of wastewater and stormwater. We can all do our part to continue this effort through a few easy lifestyle changes, including smart and cost-effective in-home habits, planting native and climate-adapted plants that need less watering, and fixing leaks and choosing water-smart appliances. You can visit [www.regionalh2o.org](http://www.regionalh2o.org) to learn more about smart water habits.

As drinking water systems age and require more upkeep, Milwaukie Public Works is planning for and completing the necessary improvements to maintain and improve upon a fully functioning drinking water system. In 2019, the city drilled a new well to replace well #2. Construction began in April of 2019 and the well was completed in September 2019. Construction on the new well house began in the

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fall of 2020 and the wellhouse was completed and new well was placed in operation in the late summer of 2022. This project was particularly challenging due to extended material delivery dates for the well pump due to supply chain issues. The Stanley Reservoir has undergone several very high-level inspections and some deficiencies were noted. Most prevalent was the exterior coating failure, improvement to the mixing of water in the tank to provide the freshest water possible and some seismic resiliency improvements. It is expected that this project will cost \$2.8 million dollars. We expect the contracts to be finalized and work to begin in the fall of 2023. This work is expected to take place during periods of low water demand. The city is in the process of making major upgrades to its automated control system for the water system. Commonly referred to as SCADA, this system will be replaced in whole with upgrades made to the communications systems, field automation, and cyber security. This \$1.9 million project will begin work in the late spring /summer of 2023 and it is anticipated that construction will last 9 months to a year depending on equipment availability. Upcoming projects include improvements to Milwaukie's two treatment facilities that will include electrical, pumping, heating/cooling and treatment upgrades.

The City of Milwaukie is proud to serve our community. We will fulfill our commitment to Milwaukie residents by providing access to clean drinking water for all Milwaukie homes and businesses, and will continue to increase the resiliency of our water systems and community overall.

Thank you for reading our Consumer Confidence Report for 2022,

**Peter Passarelli**  
*Public Works Director*

## Eliminating Lead in Drinking Water

Milwaukie was founded in 1847 and incorporated in 1903. Did you know that most of the water mains for the city were installed between the 1920s and 1970s? In those days, concerns about ingesting lead through drinking water were not understood and precautions did not exist yet. If your home was built during this era and no water has been used for an extended length of time (i.e., returning from vacation), the city recommends flushing the water sitting idly in the home's water pipes for about 30 seconds to two minutes before pouring a glass to drink, or to use in cooking or brushing teeth to minimize the potential for lead exposure. Over the past several years, the city's water department has removed and replaced any lead from its distribution system, and Milwaukie's water can be consumed with little to no fear of lead toxicity-the last 100+ lab reports for lead sampling have returned "none detected."

In 2023/2024, the city will test for lead and copper in numerous homes across Milwaukie. If you have received an invitation to participate in this in-home sampling, the city appreciates your cooperation and asks you to respond promptly.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Milwaukie is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

If you are concerned about lead, you can have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Water Sampling Reports Available Online

The community can view all of Milwaukie's water sampling results anytime at the State of Oregon Drinking Water Program website. Just visit [www.oregon.gov/oha/ph/healthyenvironments/drinkingwater/pages/index.aspx](http://www.oregon.gov/oha/ph/healthyenvironments/drinkingwater/pages/index.aspx) and enter "Milwaukie." This online tool allows anyone to browse through water sampling results for not only the City of Milwaukie, but any other water system in Oregon.

For more information or questions about the reports, contact Jamie Clark, water treatment operator, at 503.786.7686 or [clarkj@milwaukieoregon.gov](mailto:clarkj@milwaukieoregon.gov).



## Reporting Violations

City of Milwaukie failed to submit the test report for VOC sampling taken in July 2022, which led to 2 violation's with the State. This violation did not have any adverse health effects to the public. The report was delivered upon receiving notice of the violation. Milwaukie has returned-to-compliance and is in good standing.



# Everyone Can Help Protect Our Groundwater

The community can help control which chemicals are used in yards and what falls onto driveways. The city encourages everyone to limit their use of chemicals and cleaners that are harmful to the environment. Please clean up any oil or gas spills in your driveway, do not wash them into the street. Do not store fertilizers, pesticides and herbicides outdoors. These chemicals should be stored in a weatherproof shed equipped with a floor.

Properly discard old or unused chemicals, including cleaners, solvents, paints and lubricants, through the Metro hazardous waste program. Free household hazardous waste collection events are

held in communities across the Portland region each year. For a list of upcoming dates and locations near Milwaukie, or more information, visit [www.oregonmetro.gov](http://www.oregonmetro.gov). Metro also maintains an online database for other disposal options in the area.

**Do you have a septic system?** If so, please contact the city's engineering department at 503.786.7600 and ask for information about connecting to the sewer. Old septic systems are the leading cause of high nitrate levels, which leads to viral contamination of the drinking water aquifer.



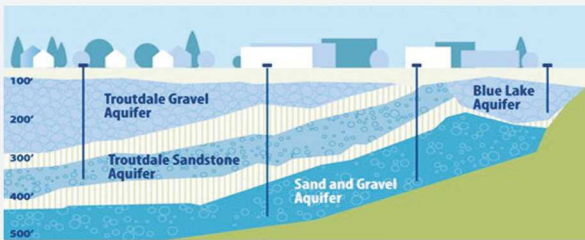
Johnson Creek

## How Milwaukie Keeps Our Water Safe

The City of Milwaukie works hard to protect its ground water resources and water distribution system. Milwaukie works closely with the state's Department of Environmental Quality (DEQ) and federal Environmental Protection Agency (EPA). Together, they monitor and cleanup past contaminated sites, and properly evaluate and decontaminate any newly discovered sites. Contaminated sites include former gas stations, dry cleaners, as well as industrial and residential properties with contaminants ranging from naphthalene to heating oil to industrial solvents. DEQ maintains a complete listing of these sites that can be viewed at [www.oregon.gov/deq/hazards-and-cleanup/Pages/default.aspx](http://www.oregon.gov/deq/hazards-and-cleanup/Pages/default.aspx).

In addition, the city's stormwater, erosion control and cross connection programs continuously work together to keep ground water, surface water and drinking water safe.

## Where Does Milwaukie's Drinking Water Come From?



Milwaukie water comes by way of the Troutdale Gravel Aquifer located more than 200 feet below ground, not local rivers or streams. This aquifer provides water for communities on both the north and south sides of the Columbia River. The Troutdale Aquifer encompasses about 300 square miles and extends from northern Clark County in Washington to south of Milwaukie, and from east of Troutdale to the Willamette River. The land mass above the aquifer and the Columbia River's prehistoric paleo-channel maintains water levels within the aquifer. In Milwaukie, the groundwater flows primarily from the northeast to southwest.

Milwaukie reaches this water source through seven operating wells that range from 250 to nearly 500 feet deep. The city's wells are located in several locations around town. Emergency water connections with Clackamas River Water District (CRWD) and Portland Water Bureau, as well as a possible future connection with Oak Lodge Water Services, are capable of supplying the water Milwaukie may need in an emergency situation. These interties allow the city's water system to assist other water systems when they need water in times of emergency or high-level maintenance. Milwaukie's water system currently isn't using water from the interties. For more information about Milwaukie's drinking water, visit [www.milwaukieoregon.gov/water](http://www.milwaukieoregon.gov/water).

The city strongly encourages everyone to sign up for the emergency alert system. To learn more about Clackamas County's emergency public alerts notification system or to sign up to receive alerts, visit [www.clackamas.us/dm/publicalerts](http://www.clackamas.us/dm/publicalerts).



## By the Numbers: Milwaukie Water Quality Data

The table below shows the results of the city's most recent water quality analyses. Staff examine Milwaukie's water at each of the city's wells and entry points, which are points where treated water enters the drinking water system. The city doesn't test for every contaminant each year. Some pose greater risks than others and are, therefore, tested more frequently. Others are less harmful and tested for sporadically. Each regulated contaminant, no matter how small the trace, is listed in this table. The name of each substance, highest level allowed by regulation, ideal goal for public health, amount detected and usual sources for contamination are presented in this data table.

Regulated Substances						
Substance	CCR Units	EPA MCL	Amount Detected	Range	Violation	Typical Source
Chlorine Residual	mg/L	4 (MRDL)	0.30	0.12 - 0.30	No	Disinfection chemical used in drinking water.
Total Coliform Bacteria (# of Positive Samples)	N/A	TT	2	N/A	No	Coliform bacteria is generally harmless and serves as an indicator of other pathogens.
Haloacetic Acids (HAA5)	mg/L	0.060	0.0015	ND - 0.0015	No	By-product of the disinfection process.
Total Trihalomethanes (TTHMs)	mg/L	0.080	0.0113	ND - 0.0113	No	By-product of the disinfection process.
Barium	mg/L	2.00	0.00298	ND - 0.00298	No	Discharge from drilling wastes, metal refineries and erosion of natural deposits.
Nitrate	mg/L	10.00	2.98	0.116-2.98	No	Nitrate is a major part of animal manure, human sewage waste and commercial fertilizers.

Tap Water Samples collected for Lead and Copper analysis from throughout the system.						
Regulated Contaminant (2022)	Action Level (AL)	MCLG	Amount Detected (90th percentile)	Homes Exceeding Action Level	Violation	Typical Source
Copper (ppm)	1.3	1.3	ND	0 out of 30	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	15	0	2	0 out of 30	No	

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in the water treatment or distribution. When this occurs, we are required to conduct investigations to identify problems and to correct any problems that were found during these investigations.

During the past year we were required to conduct one Level 1 coliform investigation. One Level 1 investigation was completed and we found the environment around the sample station was the cause of the positive results. The City cleaned up the area around the sample station and resampled, the results were negative.

## Unregulated Substances

Contaminant	Year Sampled	Average Level Found (ppb)	Range of Detections (ppb)	Major Sources in Drinking Water	Health Effects
Bromide	2019	35.74	26.5 - 44.6	A naturally occurring element. Also a byproduct of industrial pollution.	Large doses may lead to abdominal pain, coma or paralysis.
Sodium	2022	7.3 (1 sample)	N/A	Common element in nature.	Negative effects only at excessive levels.
Manganese	2019	2.6	0.4 - 4.8	One of the most abundant metals in Earth's crust. Exposure to manganese is most likely via food.	Chronic exposure can lead to adverse physical and mental effects.
Total Organic Carbon	2019	1062.5	1010 - 1120	Naturally-occurring. Innumerable sources.	Prone to react with disinfectants to produce other undesirable compounds such as haloacetic acids

The Environmental Protection Agency (EPA) uses the Unregulated Contaminant Monitoring Rule (UCMR) program to collect data for contaminants suspected of being present in drinking water, but do not yet have regulatory standards set by the EPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. UCMR4 requires monitoring for 30 chemicals to understand the frequency and level of occurrence of unregulated contaminants in the nation's public water systems. Every five years, the EPA develops a new list of UCMR contaminants. For a copy of the UCMR4 results, contact Riley Gill at 503.786.7656 or email at [gillr@milwaukieoregon.gov](mailto:gillr@milwaukieoregon.gov).

## KEY

**MCL:** maximum contaminant level

**MCLG:** maximum contaminant level goal

**MRDL:** maximum residual disinfectant level

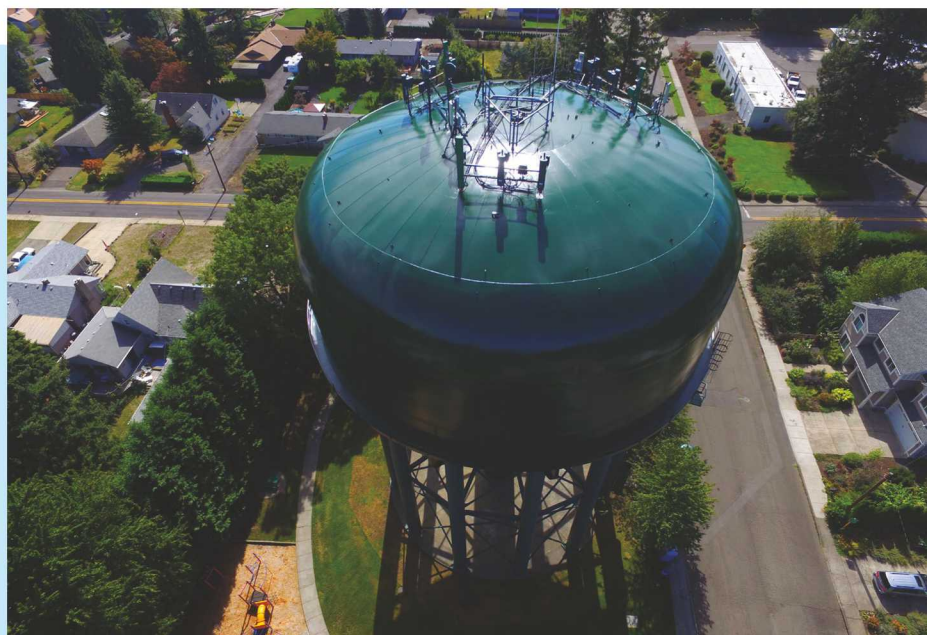
**MRDLG:** maximum residual disinfectant level goal

**ND:** none detected

**PPM:** parts per million, or milligrams per liter

**PPB:** parts per billion, or micrograms per liter

**PPT:** parts per trillion, or nanograms per liter



**Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG as feasibly possible, using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG):** The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL):** Highest level of a disinfectant allowed in drinking water. There is convincing evidence the addition of a disinfectant is necessary for control of microbial contaminants

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminate



## Is Milwaukie's Water Hard?

Water described as hard is high in dissolved minerals, specifically calcium and magnesium. Hard water is not a health risk, but is often a nuisance because of mineral buildup on fixtures and poor soap and/or detergent performance. Milwaukie's well water is classified as moderately hard with a hardness factor between 40-120 mg/L as calcium carbonate. Hardness is caused by compounds of calcium and magnesium, and by a variety of other metals. General guidelines for classification of waters are:

- **Soft** - 0 to 60 mg/L
- **Moderately Hard** - 61 to 120 mg/L
- **Hard** - 121 to 180 mg/L
- **Very Hard** - more than 180 mg/L

Water systems using groundwater as a source are concerned with water hardness. As water moves through soil and rock, it dissolves small amounts of naturally-occurring minerals and carries them into the groundwater supply. Water is a great solvent for calcium and magnesium, so if the minerals are present in the soil around a

water-supply well, the hard water may be delivered to homes. Water hardness varies throughout the United States. In areas of the country where the water is relatively hard, industries might have to spend money to soften their water as hard water can damage equipment.

Living with moderately hard water can be easy by remembering to take some simple steps each day. Leaving water on a surface will leave behind tan colored minerals as it evaporates. Always dry the area around your sink and faucet, and be sure to use a good rinse agent in your dishwasher. A rinse agent also eliminates the need to use a heated dry cycle. There are also products to use in showers and tubs that help keep hardwater spots from getting out of control. These products are typically sprayed on shower walls and doors to prevent build-up. It's important to flush hot water heaters at least once a year as well to keep calcium levels under control.

To learn more about living with hard water, visit [www.milwaukieo-region.gov/publicworks/hard-water](http://www.milwaukieo-region.gov/publicworks/hard-water) or visit the U.S. Geological Survey's website at [www.water.usgs.gov/edu/hardness.html](http://www.water.usgs.gov/edu/hardness.html).



## Source Water Assessment

In 2004, a drinking water source assessment was conducted by Oregon DEQ and the Oregon Health Authority Drinking Water Program, with assistance from city staff. The report indicates that the water system would be moderately to highly susceptible to a contamination event inside the drinking water protection area. The drinking water protection area is defined in the Source Water Assessment Report based on the distance water moves toward a well over a specified amount of time. The presence of several high and moderate risk potential contaminant sources within the protection area were confirmed through a potential contaminant source inventory. Under a "worst case" scenario, where it is assumed that nothing is being done to protect groundwater quality at the identified potential contaminant sources, the assessment results indicate that the water system would be highly susceptible to several of the identified potential contaminant sources.

In 2010, the drinking water protection area around Well #4 was reevaluated and the area was expanded slightly to the north and west. Oregon DEQ is currently working to update source assessments and the city will publish any changes to the assessment when it is complete. In addition, the assessment results indicate that Milwaukie's water system is currently considered susceptible to viral contamination. Viral contamination is typically caused by failed septic systems.

A copy of the source assessment can be viewed or obtained for no charge at the Public Works and Community Development Facility, located at 6101 SE Johnson Creek Blvd. It can also be found online at [www.deq.state.or.us/wq/dwp/swrpts.asp](http://www.deq.state.or.us/wq/dwp/swrpts.asp).



## Cross-Contamination & Backflow Assemblies

Cross-contamination is the leading cause of waterborne disease. This occurs whenever the water contacts anything that is contaminated or objectionable. Wherever this can occur is known as a cross connection. As the water supplier, the city is mandated by State of Oregon drinking water rules ( OAR 333-061-0020, 0070 through 0074) to eliminate or control all actual and potential cross-connections.

A cross-connection is any actual or potential connection between drinking water piping and any other substance. Examples of cross-connections include residential irrigation, fire sprinkler systems, commercial beverage dispensers, boilers and garden hose spray attachments. In most cases, a backflow assembly can be installed to prevent a cross-connection. If you would like to know if your home or commercial building is safe from cross-contamination, call the city's cross-connection control specialist at 503.786.7637 for a free safety survey.

If you know of any backflow assemblies on your property, have them tested annually by a certified tester-it's the law. The Oregon

Drinking Water Program (DWP) provides a current list of Oregon Health Authority (OHA)-certified Backflow Assembly Testers at [www.oregon.gov/oha/ph/healthyenvironments/drinkingwater/crossconnection/pages/publiclist.aspx](http://www.oregon.gov/oha/ph/healthyenvironments/drinkingwater/crossconnection/pages/publiclist.aspx). Community members can use this list to contact a tester who is appropriately licensed to test assemblies for compensation. Only OHA-certified testers can test assemblies in Oregon.

Certified public Backflow Assembly Testers on this list are also required to obtain licensing through the Construction Contractor's Board (CCB) at [www.ccb.state.or.us/search](http://www.ccb.state.or.us/search) or Landscape Contractor's Board (LCB) at [www.oregon.gov/lcb/pages/index.aspx](http://www.oregon.gov/lcb/pages/index.aspx). DWP does not verify CCB or LCB licensing for individuals on this list of public testers. Customers should always verify the licensing of any contractor they hire by using the above links or by calling the CCB at 503.378.4621 or the LCB at 503.967.6291.



## Drinking Water Information from the EPA

In order to ensure tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Drinking water, including bottled water, may be reasonably expected to contain small amounts of some contaminants. However, the presence of contaminants does not necessarily indicate that the water poses a health risk. For example, trace amounts of copper are required for proper organ function, but excessive copper can lead to gastrointestinal complications and disease. For more information, contact the EPA's Safe Drinking Water Hotline at 1.800.426.4791.

### Special Notice for Immuno-Compromised Persons

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and Centers for Disease Control guidelines on the appropriate ways to reduce the risk of infection by microbiological contaminants are available at [www.epa.gov/safewater](http://www.epa.gov/safewater) or from the EPA's Safe Drinking water hotline at 1.800.426.4791.

## Let Us Know!

The city would like to hear from you! If you notice any of the following changes, contact the Water Department at [publicworks@milwaukieoregon.gov](mailto:publicworks@milwaukieoregon.gov) or 503.786.7615.



- Water is pooling or the lawn is unseasonably green near the water meter. There may be a leak to repair.
- Water pressure decreases or increases unexpectedly. There may be constriction or leak in your plumbing.
- Water from the faucet has a color to it. There may be debris in the main line to be flushed.
- A fire hydrant is being used and no city staff are around. This may be a case of water theft or vandalism and the water department prosecutes offenders.

## Get Involved!

The city has many ways for community members to engage with staff Check out the city website at [www.milwaukieoregon.gov](http://www.milwaukieoregon.gov) or Engage Milwaukie at [engage.milwaukieoregon.gov](http://engage.milwaukieoregon.gov) for engagement opportunities and public meetings. Many are held virtually or using a combination of virtual and in-person options. Meeting schedules and locations are subject to change, see the city's online calendar for the most up-to-date information.





## CITY OF MILWAUKIE

6101 SE Johnson Creek Blvd  
Milwaukie, OR 97206

Jamie Clark, Lead Water Treatment Operator  
503.786.7686 · clarkj@milwaukieoregon.gov

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### More Information

#### City of Milwaukie:

**Lead Water Treatment Operator: Jamie Clark**  
503.786.7686 or clarkj@milwaukieoregon.gov

**Utility Billing**  
503.786.7525 or utilitybilling@milwaukieoregon.gov

**Public Works**  
503.786.7600 or publicworks@milwaukieoregon.gov

**Public Works: 24-Hour Emergency Dispatch**  
503.786.7500

**City Hall**  
503.786.7555

#### Johnson Creek Watershed Council

503.652.7477 or www.jcwc.org

#### North Clackamas Urban Watersheds Council

503.550.9282 or www.ncurbanwatershed.wordpress.com

#### Regional Water Providers Consortium

503.823.7528 or www.conserveh2o.org



## CITY OF MILWAUKIE

### Public Works

6101 SE Johnson Creek Blvd  
Milwaukie, OR 97206

milwaukieoregon.gov



#### Water Environment Services

503.742.4567 or www.clackamas.us/wes

#### Oregon Health Authority: Drinking Water Services

503.731.4010 or www.oregon.gov/oha

#### United States Environmental Protection Agency

1.800.426.4791 or www.epa.gov

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