

# **ANNUAL DRINKING WATER QUALITY REPORT FOR 2021**

**VILLAGE OF WAPPINGERS FALLS MUNICIPAL WATER SYSTEM  
2582 SOUTH AVENUE  
WAPPINGERS FALLS, NEW YORK 12590  
(PUBLIC WATER SUPPLY ID# 1302783)**

## **INTRODUCTION:**

To comply with State and Federal regulations, the Village of Wappingers Falls Municipal Water System will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions about this report or concerning your drinking water, please contact the office of the Village of Wappinger Falls Water Department, 2582 South Avenue, Wappingers Falls, New York 12590, (845) 297-8773, extension 8. We want you to be informed about your drinking water. If you want to learn more, please attend our regularly scheduled meetings of the Village Board of Water Commissioners on the Monday before the second Wednesday of each month at 3:00 p.m. at the Water Treatment Facility located at 2784 West Main Street, Wappingers Falls, New York.

## **WHERE DOES OUR WATER COME FROM ?**

In general, the sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic and chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

All water is now supplied by the Village of Wappingers Falls Water Treatment Facility. Construction of the Village of Wappingers Falls Water Treatment Facility began in the Spring of 2010, and was completed in December of 2011. The Plant began providing finished water to the Village customers on December 28, 2011.

The source of the water provided by the new Village of Wappingers Falls Water Treatment Facility is from three (3) active wells located at the 8.0 acre Village wellfield.

- Wells #1 and #2 (inactive) were both formally abandoned in 2010/11.
- Well #3 is a 12" x 18" gravel pack type well 95 feet in depth, originally constructed in 1959 and re-drilled in 1997. Well #3 was previously taken off line due to an increase in manganese content, and remained offline during 2021. It had previously produced up to 150 gpm.
- Well #4 (inactive) is a 12" x 18" gravel pack type well 100 feet in depth, originally constructed in 1965 and re-drilled in 1997. Well #4 was taken offline in October of 2003 due to an increase in iron content.
- Well #5 (inactive) is a 24" x 30" gravel pack type well, 105 feet in depth, originally constructed in 1984. Well #5 was taken off line in 1994 due to significant increases in iron content.
- Well #7 and #7A are both 16" x 24" gravel pack type wells. Well #7 is 99 feet in depth and was originally constructed in 2005. Well #7A is 98 feet in depth and was originally constructed in 2010. Both wells were tested for production and water quality immediately following their construction, and were deemed adequate for drinking water purposes. Each well was tested at a production rate of approximately 600 gpm. Further analysis confirmed that either well can produce a maximum flow of 600 gpm of water under theoretical drought conditions. Both Well #7 and #7A were placed into service on September 13, 2011.

The Village of Wappingers Falls Water Treatment Plant utilizes state of the art technology to treat the well water supply. The approved design parameters include softening of up to 700 gallons per minute (GPM) utilizing an ion exchange type softener system. Raw water hardness is approximately 21 grains, and finished water hardness is approximately 6 grains. Disinfection is provided through the use of ultraviolet light reactors, followed by a minimal dose of chlorine to provide a satisfactory residual throughout the distribution system. Free chlorine residual test results averaged 0.40 mg/L for 2021, with a range of 0.20 mg/L (low) to 1.56 mg/L (high). The Plant facilities and wells are partially automated, and controlled via a Supervisory Control System (SCADA). The Plant is rated at an approved (design) maximum production capacity of approximately 1 million gallons per day (MGD).

Starting in September of 2015 (under the direction of the Village Engineer, and with the approval of the Dutchess County Health Department) the Water Plant began adding "Carus 8100" (a blended ortho / polyphosphate) to the finished water. This water treatment chemical acts as a manganese sequestrant and corrosion inhibitor.

The Village of Wappingers Falls water storage facilities consists of two active (2) tanks.

- The Wenliss Tank has a capacity of 1.4 million gallons.
- The DeLavernge Tank has a capacity of 545,000 gallons.
- The Hillside Tank (inactive) has a capacity of 170,000 gallons.

During 2021 our system did not experience any restriction of our water source.

The NYSDOH has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumer is, or will become contaminated. See section "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected, if any. The source water assessments provide resource managers with additional information for protecting source waters into the future. The source water assessment has rated our well field water source as having an elevated susceptibility to microbial and nitrate contamination. These ratings are due primarily to the residential land use and related activities in the assessment area. In addition, the wells draw from the sand and gravel aquifer, and the overlying soils may not provide adequate protection from potential contamination. The county and state health departments will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning and education programs. The New York State Rural Water Association (in cooperation with the Village of Wappingers Falls) has prepared a "Source Water Protection Plan".

## **FACTS AND FIGURES:**

The Village of Wappingers Falls Municipal Water System serves an estimated 6,103 people (2020 Census estimate) through approximately 1,524 service connections.

In 2021 the Village of Wappingers Falls Water Treatment Facility had a total treated water output of approximately 172.5 million gallons, or 472,507 gallons per average day. The total billed water during the same period was approximately 152.5 million gallons, or 417,768 gallons per average day. Estimated losses, municipal usage, construction usage, flushing of the water system, fire-fighting usage, and/or non-billed water theft accounted for approximately 20.0 million gallons (11.6 % ±). In 2021 Village of Wappingers Falls residential users were charged a bi-monthly base rate of \$ 43.70 per unit (\$ 22.10 for seniors). Additionally, residential users were billed based on bi-monthly water meter readings at the rate of \$ 2.40 per 100 cubic feet of water (or 748 gallons) up to 1200 cubic feet, and \$ 4.95 per 100 cubic feet over 1200 cubic feet.

## **ARE THERE CONTAMINANTS IN OUR DRINKING WATER ?**

As the State regulations require, the Village of Wappingers Falls Water System routinely tests your drinking water for numerous contaminants. Testing is performed in conformance with the provisions of Part 5 of the New York State Sanitary Code. Subsequent to the completion of the new Village Water Treatment Facility, a new testing protocol was implemented with the Dutchess County Health Department. A brief outline of said testing is as follows.

- **Daily Sampling:** Both the source (raw) water and the finished treated water are tested each day for iron, manganese, hardness and total phosphate. The distribution system is tested each day for free chlorine residual. The UV disinfection system continuously tests finished (treated) water to insure adequate dosage.
- **Microbiological:** Six (6) total samples are collected and analyzed for coliform bacteria monthly.
- **Chloride:** 1 sample to be taken yearly at entry point.
- **Iron:** 1 sample to be taken each calendar quarter from the entry point and 1 sample to be collected yearly from the raw well water.
- **Manganese:** 1 sample to be taken each calendar quarter from the entry point and 1 sample to be collected yearly from the raw well water.
- **Nitrate:** 1 sample to be taken yearly at the entry point.
- **Lead and Copper:** 20 samples to be taken from the distribution system. The Village of Wappingers Falls is currently on a reduced monitoring frequency for lead and copper. The next samples must be collected by 9/30/22.
- **Radiological Samples:** 1 sample to be taken every nine years from the entry point. Next sample must be collected by 12/31/2030.
- **Primary Inorganic Chemicals:** 1 sample to be taken from the entry point every three years. Next sample must be collected by 12/31/2024.
- **Disinfection Byproducts:** 1 sample to be taken yearly from a sampling point representing the maximum residence time in the distribution system.
- **Principle Organic Chemicals (POC's):** 1 sample to be taken yearly from the raw well water.
- **Sodium:** 1 sample to be taken yearly at entry point.
- **Asbestos:** 1 sample to be taken every nine years from the distribution system. Next sample must be collected by 12/31/2022.
- **Total Phosphate:** 1 sample to be taken quarterly from the distribution system (added 9/04/15).

Complete analytic results are available for public inspection at the offices of the Village of Wappingers Falls Water Department, 2582 South Avenue, Wappingers Falls, New York 12590 (845) 297-8773.

The following table depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once a year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

### Village of Wappingers Falls WTP - Table of Detected Contaminants 2021

Contaminant	Violation (yes/no)	Date of Sample	Level Detected (Avg. / Range)	Unit Measure	MCLG	Regulatory Limit	Likely Source of Contamination
<b>INORGANIC CONTAMINANTS</b>							
Arsenic (most recent)	No	9/10/2021	1.5	ug / L	n/a	MCL = 10	Erosion of natural deposits and runoff from orchards.
Barium	No	9/10/2021	0.0046	mg / L	2	MCL = 2	Erosion of natural deposits.
Chloride	No	5/26/2021	100	mg / L	n/a	MCL = 250	Naturally occurring, road salt, water softeners, animal waste.
Copper (most recent)	No	6/28/2019	120 <sup>1</sup> range = 0.04 - 2.10	mg / L	1.3	AL = 1.3 <sup>1</sup>	Corrosion of household plumbing systems.
Hardness (raw)	No	3/26/2021	raw well # 3 = 260	mg/ L	n/a	n/a	Naturally occurring.
Hardness (entry)	No	12/3/2021 (latest)	range = 46 - 75 avg. = 63	mg/ L	n/a	n/a	Naturally occurring.
Iron (raw water) <sup>3</sup>	No	3/26/2021	raw well # 3 = 320	ug / L	n/a	MCL = 300 <sup>3</sup>	Naturally occurring.
Lead (most recent)	No	6/28/2019	2.6 <sup>1</sup> range = U - 5.0	ug / L	0	AL = 15 <sup>1</sup>	Corrosion of household plumbing systems.
Manganese (finished)	No	12/3/2021	range = 64 - 110 avg. = 80	ug / L	n/a	MCL = 300	Naturally occurring.
Manganese (raw water) <sup>3</sup>	No	3/26/2021 2/24/2021	raw well # 3 = 640 raw well # 7 = 640	ug / L	n/a	MCL = 300 <sup>3</sup>	Naturally occurring.
Nickel	No	9/10/2021	0.00071	mg / L	n/a	n/a	Erosion of natural deposits.
Nitrate	No	7/16/2021	0.75	mg / L	10	MCL = 10	Runoff from fertilizer use, leaching from septic tanks, erosion of natural deposits.
Phosphate (total)	No	6/11/2021 (latest)	range = 1.2 - 1.6 avg. = 1.4	mg / L	n/a	n/a	A blended ortho/ polyphosphate is added at the WTP as manganese sequestration / corrosion inhibitor.
Selenium	No	9/10/2021	2.5	ug / L	50	MCL = 50	Discharge from petroleum.
Sodium <sup>2</sup>	No	12/10/2021	160 <sup>2</sup>	mg / L	n/a	see Note 2	Naturally occurring, road salt, water softeners, animal waste.
<b>DISINFECTION BYPRODUCTS</b>							
Total Trihalomethanes	No	10/7/2021	7.9 (total)	ug / L	n/a	MCL = 80	Byproduct of drinking water disinfection.
Haloacetic Acids (HAA)	No	10/7/2021	4.5 (total)	ug / L	n/a	MCL = 60	Byproduct of drinking water disinfection.
<b>SYNTHETIC ORGANIC CONTAMINANTS</b>							
Perfluorooctanoic Acid (PFOA)	No	9/20/2021 (most recent)	well 3 range = ND - 0.81 well 3 avg. = 0.27 well 7 range = 1.65-2.38 well 7 avg. = 2.05	ng / L	n/a	MCL = 10	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctane Sulfonic Acid (PFOS)	No	9/20/2021 (most recent)	well 3 range = 3.86-4.53 well 3 avg. = 4.21 well 7 range = 2.62-3.68 well 7 avg. = 3.36	ng / L	n/a	MCL = 10	Released into the environment from widespread use in commercial and industrial applications.
<b>RADIOACTIVE CONTAMINANTS</b>							
Gross Beta	No	8/6/2021	1.40	pCi / L	0	MCL = 50 <sup>4</sup>	Decay of natural deposits
Radium-226 + 228	No	8/6/2021	0.113 + 0.909 = 1.022	pCi / L	0	MCL = 5	Erosion of natural deposits.

1) A total of 20 lead/copper samples were collected for 2019. This level represents the 90<sup>th</sup> percentile of the 20 sites tested during each round of sampling. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90<sup>th</sup> percentile is equal to or greater than 90 % of the lead / copper values detected in your water system. In this case, 20 samples per each round were collected at your water system and the 90<sup>th</sup> percentile value was the 18<sup>th</sup> highest value. The Action Level for lead was not exceeded at any site tested. The Action Level for copper was met or exceeded at two (2) sites tested. These are the most recent results as required by the local Health Department.

2) Water containing more than 20 mg/L of sodium should not be used for drinking by people on severely restricted sodium diets (as noted on the bimonthly bills). Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.

3) Raw water iron and manganese levels are prior to treatment and for informational purposes only. All finished (treated) water iron and manganese levels were below the MCL level. There were no MCL violations.

4) The State considers 50 pCi / L to be the level of concern for beta particles.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Dutchess County Health Department at (845) 486-3400.

## **DEFINITIONS:**

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLGs as feasible.
- **Maximum Contaminant Level Goal (MCLG):** The level of a 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 Disinfection Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefit of the use of disinfectants to control microbial contamination.
- **Action Level (AL):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **Non-Detects (ND):** Laboratory analysis indicates that the constituent is not present.
- **Nephelometric Turbidity Unit (NTU):** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **Milligrams per liter (mg/L):** Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).
- **Micrograms per liter (ug/l):** Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).
- **Nanograms per liter (ng/l):** Corresponds to one part of liquid to one trillion parts of liquid (parts per trillion - ppt).
- **Picocuries per Liter (pCi/L):** A measure of the radioactivity in Water.
- **Millirems per year (mrem/yr):** A measure of radiation absorbed by the body.
- **Million Fibers per Liter (MFL):** A measure of asbestos fibers that are longer than 10 micrometers.

## **WHAT DOES THIS INFORMATION MEAN ?**

As you can see from the previous table, our system had no violations. We have learned through our testing that some of the listed contaminants have been detected; however, these contaminants were detected below New York State requirements.

We are required to present the following information on lead in drinking water:

*"If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants and young children. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Village of Wappingers Falls Water system is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested (by your lab at your own expense). Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the safe drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>".*

Also, see the attached information sheets regarding Per- and Polyfluoroalkyl Substances (PFAS).

## **IS OUR WATER SYSTEM MEETING OTHER RULES GOVERNING OPERATIONS?**

During 2021 the Village of Wappingers Falls Water System was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

## **DO I NEED TO TAKE SPECIAL PRECAUTIONS ?**

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised 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, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

In general, the use of water softeners creates the possibility of increasing the sodium content in the finished water. As per NYS Drinking Water Part 5 "Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets". The most recent sodium level for our finished water was 160 mg/L (12/10/2021). As required, this information is provided on the bi-monthly billing statements.

## **INFORMATION FOR NON-ENGLISH SPEAKING RESIDENTS**

Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

## **WHY SAVE WATER AND HOW TO AVOID WASTING IT ?**

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water.

- Saving water saves energy and some of the costs associated with both of these necessities of life.
- Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire-fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less. It is not hard to conserve water. Conservation tips include:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If the red dial on the bottom right of the new style meters moves, you have a leak.

**SYSTEM IMPROVEMENTS: JANUARY 2021 - DECEMBER 2021:**

In 2021 the Village of Wappingers Falls Water System made the following capital improvements:

- Continued replacement of commercial water service meters, and residential service meters/ radio read transmitters.
- Continued with cross connection control ordinance enforcement and backflow prevention device testing program.
- Ongoing repair and replacement of faulty line valves, hydrants, curb valves / boxes, and water services.
- Vacuum out line valve boxes (street) and install mud plugs.
- Replace old faulty fire hydrant on Adams Street.

**FUTURE CAPITAL IMPROVEMENTS:**

The Mayor and Village Board of Trustees, in coordination with the Village Engineer and the Village Water and Highway Departments has adopted a capital improvement plan to replace water and sewer mains and appurtenances throughout the Village. Utility Contracts # 1 through # 4 have been completed to date.

Planned future capital improvements include:

- Install iron and manganese filtration facilities at the Water Treatment Plant.
- Inter-Municipal Contract with the Town of Poughkeepsie/ Joint City Town of Poughkeepsie Water Board.
- Install flushing hydrant on Village main below Town of Poughkeepsie interconnection (DeLavernge Avenue)
- Utility Contract # 5.
- Continuation of backflow prevention program.
- Potential interconnection with the Town of Wappinger on Myers Corners Road.
- Replace water main(s) on Givans Avenue, and loop to new PVC water main in the Industrial Park.
- Extend new 12” DIP water main on North Mesier Avenue, and loop to Liss Road and Route 9 at Abbey Carpet.

**CLOSING:**

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources which are the heart of our community and our way of life. The Public should be vigilant in reporting any suspicious activity around the water plant. All reports should be directed to the Village of Wappingers Falls Police Department at (845) 297-1011. Please call our offices if you have any questions.

Village of Wappingers Falls Water Commissioners and Water Department –

Rick Cerino, Mayor  
Kevin Huber, Commissioner  
Don McCormick, Commissioner  
Jeff Smith, Commissioner  
Brenda Alfonso, Water Department Clerk  
Ken Crusie, Water System Operator  
John Kozak, Water System Operator  
Tyler Windheim, Water System Operator  
Todd W. Atkinson, P.E. – J. Robert Folchetti & Associates, LLC  
Peter J. Paggi, Superintendent of Public Works

# Per- and Polyfluoroalkyl Substances (PFAS)

## Frequently Asked Questions

### What are PFAS?

PFAS are a large group of man-made chemicals that have been used since the 1950s. Use of some of these chemicals has decreased in the United States over the last 10 years. People can still be exposed to PFAS because they are still present in the environment. PFAS do not break down easily in the environment. They also build up in the bodies of exposed humans and animals. Over the last decade, interest in PFAS has grown.

### How can I be exposed to PFAS?

ATSDR and our state health partners are studying exposure to PFAS at a number of sites. PFAS are found near areas where they are manufactured or used. Listed below are places where they can be found.

- Public water systems and drinking water wells, soil, and outdoor air near industrial areas with frequent PFAS use
- Indoor air in spaces that contain carpets, textiles, and other consumer products treated with PFAS to resist stains
- Surface water (lakes, ponds, etc.) and run-off from areas where aqueous (water-based) film-forming fire fighting foam (AFFF) was often used (like military or civilian airfields)
- Locally caught fish from contaminated bodies of water
- Food items sold in the marketplace

### Consumer products can be source of exposures to PFAS. These products include

- Some grease-resistant paper, fast food wrappers, microwave popcorn bags, pizza boxes, and candy wrappers
- Nonstick cookware such as Teflon<sup>®1</sup> coated pots and pans
- Stain resistant coatings such as Scotchguard<sup>®1</sup> used on carpets, upholstery, and other fabrics
- Water resistant clothing such as Gore-Tex<sup>®1</sup>
- Cleaning products
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Paints, varnishes, and sealants

Recent efforts to stop using some PFAS in consumer products appear to have lowered exposure in the U.S. population. CDC surveys have shown that blood levels of PFAS have dropped over time. People who work with PFAS are more likely to be exposed than the general population. Workers may be exposed to PFAS by inhaling them, getting them on their skin, and swallowing them, but inhaling them is the most likely route for exposure.

### How can I reduce my exposure to PFAS?

PFAS are found in people and animals all over the world. They are found in some food products and in the environment (air, water, soil, etc.). Completely stopping exposure to PFAS is unlikely. But, if you live near sources of PFAS contamination you can take steps to reduce your risk of exposure to PFAS:

- Some states have warnings about eating fish from bodies of water with high PFAS levels. Check with your state public health and environmental quality departments to learn the types and local sources of fish that are safe to eat.
- If your water contains PFAS, you can reduce exposure by using an alternative or treated water source for drinking, food preparation, cooking, brushing teeth, and any activity that might result in ingestion of water.
- It is safe to shower and bathe in PFAS-contaminated water. Neither routine showering or bathing are a significant source of exposure. Studies have shown very limited absorption of PFAS through the skin.



## How can PFAS affect people's health?

Scientists are not sure about the health effects of human exposure to PFAS. Some studies in humans have shown that certain PFAS may affect the developing fetus and child, including possible changes in growth, learning, and behavior. In addition, they may decrease fertility and interfere with the body's natural hormones, increase cholesterol, affect the immune system, and even increase cancer risk.

- PFAS build up and stay in the human body and the amount goes down very slowly over time. So scientists and doctors are concerned about their effects on human health.
- Some studies show that animals given PFAS have changes in the liver, thyroid, pancreas, and hormone levels. Scientists are not sure what animal data means about human health. PFAS act differently in humans than they do in animals and may be harmful in different ways.

## How can I learn more?

Contact 1-800-CDC-INFO for updated information on this topic.

Contact the Consumer Product Safety Commission at (800) 638-2772 if you have questions about the products you use in your home.

Visit the following websites for more information:

### ATSDR Websites

<http://www.atsdr.cdc.gov/pfc/index.html>

### Environmental Protection Agency

<http://www2.epa.gov/chemical-research/perfluorinated-chemical-pfc-research>

## List of Common PFAS and Their Abbreviations

Compound	Abbreviation
Perfluorobutane sulfonate	PFBS
Perfluorohexane sulfonate	PFHxS
Perfluorooctane sulfonate	PFOS
Perfluoroheptanoic acid	PFHpA
Perfluorooctanoic acid	PFOA
Perfluorononanoic acid	PFNA
Perfluorodecanoic acid	PFDA
Perfluoroundecanoic acid	PFUnA
Perfluorododecanoic acid	PFDoA
Perfluorooctane sulfonamide	PFOSA
2-(N-Methyl-perfluorooctane sulfonamido) acetate	Me-PFOSA-AcOH
2-(N-Ethyl-perfluorooctane sulfonamido) acetate	Et-PFOSA-AcOH

### Notes

<sup>1</sup>Use of trade names is for identification only and does not imply endorsement by the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, the Public Health Service, or the U.S. Department of Health and Human Services