

# WRIGHT-PATTERSON AIR FORCE BASE NOTIFICATION OF PER- AND POLYFLUOROALKYL SUBSTANCES NATIONAL PRIMARY DRINKING WATER REGULATIONS

JANUARY 24, 2025

On June 25, 2024, a new U.S. Environmental Protection Agency (USEPA) rule went into effect that established drinking water standards for certain per- and polyfluoroalkyl substances (PFAS) chemicals under the Safe Drinking Water Act. The rule for PFAS chemicals established legally enforceable levels, called maximum contaminant levels (MCLs), based on annual running averages, and it applies to regulated public drinking water systems across the nation, including Wright-Patterson Air Force Base (WPAFB). USEPA estimates that approximately 6,000 of the 66,000 regulated public drinking water systems may need to take action to meet these new standards. The rule requires regulated public drinking water systems to meet the MCLs listed in the table below by April 26, 2029. USEPA understands that achieving compliance with this rule may require significant investments for some water systems. To provide adequate time for planning, compliance, and implementation of necessary treatment systems, USEPA has established a five-year compliance period to allow water systems the flexibility and time to develop solutions to meet the needs of their communities.

PFAS Chemical	MCL parts per trillion (ppt)
PFOS	4 ppt
PFOA	4 ppt
HFPO-DA	10 ppt
PFNA	10 ppt
PFHxS	10 ppt
Mixture of PFHxS, PFNA, PFBS & HFPO-DA	Hazard Index (HI) = 1 (unitless)

## What are PFAS chemicals?

PFAS are a large class of man-made chemicals manufactured for industrial applications and commercial household products such as: nonstick cookware, waterproof and stain resistant fabrics and carpets, water-resistant clothing, firefighting foam, cleaning products, microelectronics, batteries and medical equipment. The properties that make these chemicals useful in so many of our everyday products also tend to break down extremely slow in the environment and may accumulate in people, animals and the environment. Exposure may be from food, food packaging, consumer products, house dust, indoor and outdoor air, drinking water and at workplaces where PFAS were made or used. The presence of PFAS in the environment is a national issue due to its wide-spread use in many industrial and consumer products.

## How were/are PFAS chemicals used at WPAFB?

At Wright-Patterson AFB the primary source of PFAS in the environment at the base was from the use of firefighting foam that contained PFAS and was used at the base from the 1970s to 2018. A study is currently underway to identify other sources/processes on base that may utilize PFAS.

## What are the potential health effects from PFAS?

According to USEPA, some people who drink water containing PFAS in excess of the MCLs over many years may have increased health risks, such as cardiovascular, immune, thyroid and liver effects, as well as increased incidence of certain types of cancers, including kidney and testicular cancer. In addition, there may be increased risks of developmental and immune effects for people who drink water containing PFAS in excess of the MCLs following repeated exposure during pregnancy and/or childhood. Additional information regarding PFAS exposure can be found on the USEPA website (<https://www.epa.gov/pfas>) and on the Centers for Disease Control and Prevention's Agency for Toxic Substances and Disease Registry website (<https://www.atsdr.cdc.gov/pfas/>). The science on PFAS is

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evolving. There is extensive research being conducted to determine where PFAS exist and what impact they have on human health and the environment.

## What are the current PFAS levels in drinking water at Wright-Patterson AFB?

Three public drinking water treatment plants (WTP) at the base (two in Area A, and one in Area B) treat extracted groundwater from ten wells on the base. The WTPs provide finished drinking water to the base population, including The Woods Housing along National and Kauffman Roads (water provided by Area B WTP). Each well has differing levels of PFAS. The finished water from the three WTPs is sampled on a monthly and quarterly basis for PFAS chemicals. The PFAS levels have been reported in the annual drinking water consumer confidence report (CCR) and the 2023 sampling results of the finished water are summarized in the table below. The 2023 CCR is attached and available at the following website: <https://www.amwater.com/ccr/wrightpattersonafb.pdf>.

PFAS Chemical	MCL	Area A WTP 30172 Avg	Area A WTP 30172 Ranges	Area A WTP 10855 Avg & Ranges	Area B WTP Avg	Area B WTP Ranges
PFOS	4 ppt	7.23	4.9 - 13.5	ND	12.4	ND - 17.2
PFOA	4 ppt	1.33	ND - 5.3	ND	4.8	ND - 7.0
HFPO-DA	10 ppt	ND	ND	ND	ND	ND
PFNA	10 ppt	ND	ND	ND	ND	ND
PFHxS	10 ppt	8.2	ND - 17.5	ND	18.1	ND - 24.5
PFBS	None	4.75	ND - 6.9	ND	2.2	ND - 5.7
Mixture of HFPO-DA, PFNA, PFHxS, PFBS	HI = 1	0.8	ND - 1.8	ND	1.8	ND - 2.3

ND = non-detectable (below laboratory detection levels)

Exceed MCLs

## What actions are being taken by Wright-Patterson AFB to address PFAS above the MCLs in the base's drinking water?

In 2017, one of the Area A drinking water plants (WTP 10855) was equipped with a PFAS treatment system and currently PFAS levels in the drinking water from that plant meets the MCLs. Once the drinking water exits WTP 10855 it mixes with drinking water from the second Area A plant (WTP 30172) for distribution throughout Area A of the base. To address the PFAS levels that are above the MCLs, the base has programmed for the design and construction of PFAS treatment systems for both WTP 30172 and the Area B WTP. These projects are awaiting Air Force approval of funding. The request for funds is being managed by the Air Force Civil Engineer Center's Utilities Privatization Branch.

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## **What actions are being taken by Wright-Patterson AFB to address PFAS released into the environment?**

The Department of Defense (DoD) and Department of Air Force (DAF) are committed to taking care of our people and the surrounding communities. We are aggressively taking numerous actions to address PFAS releases related to past DoD and DAF activities under federal cleanup laws, investing in research and development to support these efforts, and engaging with the public and community stakeholders on PFAS concerns. Since 2014, the Air Force has invested over \$61 million at Wright-Patterson to take the following actions to address PFAS related to past DoD and DAF activities: sampling drinking water, conducting assessments and investigations to determine locations and levels of PFAS on and off base, installing and sampling numerous groundwater monitoring wells on and off base, sampling surface water, soils and sediments, conducting investigations to determine and characterize the nature and extent of PFAS in the environment, removal of firefighting foam containing PFAS from building fire suppression systems and fire department response vehicles, and the installation of three treatment systems to remove PFAS from groundwater and surface water. Wright-Patterson AFB shares the status of these efforts on a routine basis with the regulatory agencies, community members and the public. PFAS remains a complex national issue and many federal and state agencies are working together to address it. There is significant attention on PFAS releases from DoD and DAF activities and the subsequent potential impact to human health and the environment. The DoD and DAF recognize the importance of this issue and are committed to addressing PFAS in a deliberative, holistic, and transparent manner. Should you have any questions please contact the 88th Air Base Wing Public Affairs Office at (937) 522-3252 or email [88abw.pa@us.af.mil](mailto:88abw.pa@us.af.mil).



2023 Annual

# Water Quality Report

Wright-Patterson Air Force Base

PWS ID: 2903412 & 2903312



AMERICAN WATER

Military Services

This report contains important information about your drinking water. If you do not understand it, please have someone explain or translate it for you.

Este informe contiene información muy importante sobre su agua potable. Si no lo comprende, favor acudir a alguien que se lo pueda traducir o explicar.

## Continuing Our Commitment

### A Message From Military Services Group President Sean D. Wheatley

American Water's Military Services Group owns and operates water and wastewater utilities under the Utilities Privatization program and proudly provides water and wastewater services to military communities around the country, including yours. Our Company's Vision – "We Keep Life Flowing" drives everything we do for you, our customers. To reinforce our vision and maintain your trust, it's important that we share with you information about our commitment to providing high-quality water service.

I am pleased to provide you with the 2023 Annual Water Quality Report with detailed information about the source and quality of your drinking water. We have prepared this report using the data from water quality testing conducted for your local water system from January through December 2023.

With equal importance, we place a strong focus on acting as stewards of our environment. In all of the communities we serve, we work closely with the local directorates of public works, civil engineering squadrons, local environmental departments and state regulatory agencies to protect environmental quality, educate customers on how to use water wisely, and ensure the high quality of your drinking water every day.

At American Water, our values – safety, trust, environmental leadership, teamwork, and high performance – mean more than simply making water available "on-demand". It means every employee working to deliver a key resource for public health, fire protection, mission assurance, the economy and the overall quality of life we enjoy – We Keep Life Flowing. For more information or for additional copies of this report, visit us online at [www.amwater.com](http://www.amwater.com).

Sincerely,

Sean D. Wheatley

President – American Water's Military Services Group

## Water Quality Statement

The staff and management of the WPAFB American Water Operations and Maintenance (AW O&M) water utility are pleased to report that the water provided to you during the past year met all the State and Federal standards set for drinking water. The 1996 amendments to the Federal Safe Drinking Water Act require that WPAFB deliver a brief annual water quality report to all customers.

## WPAFB License to Operate (LTO)

In 2023, AW O&M had an unconditioned LTO for two Public Water Systems, (Area A: 2903412 and Area B: 2903312).

## Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## Water Information Sources

With a history dating back to 1886, American Water Works Company, Inc. (NYSE: AWK) is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 6,800 dedicated professionals who provide regulated and market-based drinking water, wastewater, and other related services to an estimated 15 million people in 46 states. American Water provides safe, clean, affordable, and reliable water services to our customers to make sure we keep their lives flowing.

American Water's Military Services Group, a subsidiary of American Water, owns and operates water and wastewater systems on 18 military installations, serving approximately 450,635 service men, woman, and their families. For more information, visit [amwater.com](http://amwater.com) and follow us on Twitter and Facebook.

The web sites of US EPA Office of Water, the Centers for Disease Control and Prevention, and Ohio Environmental Protection Agency (OEPA) provide a substantial amount of information on many issues relating to water resources, water conservation and public health. You may visit these sites as well as American Water's website at the following addresses:

### United States Environmental Protection Agency

[www.epa.gov/safewater](http://www.epa.gov/safewater)

### Ohio Environmental Protection Agency

[www.epa.ohio.gov](http://www.epa.ohio.gov)

### American Water

[www.amwater.com](http://www.amwater.com)

### American Water Works Association

[www.awwa.org](http://www.awwa.org)

**Safe Drinking Water Hotline:** (800) 426-4791

## What is a Water Quality Report?

To comply with the Ohio Environmental Protection Agency (OEPA) and the U.S. Environmental Protection Agency (EPA) regulations, American Water issues a report annually describing the quality of your drinking water. The purpose of this report is to provide you an overview of last year's (2023) drinking water quality. It includes details about where your water comes from and what it contains. We hope the report will raise your understanding of drinking water issues and awareness of the need to protect your drinking water sources. For more information, please contact American Water at: 937-623-9786.

## Water Conservation Tips

**Conservation measures you can use inside your home include:**

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets, and appliances.

- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

**You can conserve outdoors as well:**

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car and save the hose for rinsing.

### **Where Does My Water Come From?**

The source of WPAFB's drinking water is the Great Miami Buried Valley Aquifer. This natural aquifer provides approximately one billion gallons of water each year to WPAFB. There are six wells that serve Area A and four wells that serve Area B. Treatment includes air stripping (removes volatile organic compounds) (VOCs), chlorine disinfection (eliminates bacteria), fluoridation (promotes strong teeth) and the addition of polyphosphate (corrosion control). Water from two of the wells in Area A is also treated by a granular activated carbon (GAC) system (removes perfluorinated compounds) (PFCs). Housing residents in The Bricks and The Woods receive water which is softened (removes minerals). Please note that AW O&M does not supply water to The Prairies; water to The Prairies is provided by Montgomery County. The Area A public water system (PWS) has interconnections with the City of Fairborn. The City of Fairborn is capable of supplying water to Area A to meet emergency needs. The Area B water system has an alternate ground water supply from wells located by Huffman Prairie.

### **Source Water Assessment**

In 2007, the OEPA completed a study of WPAFB's source of drinking water to identify potential contaminant sources and provide guidance on protecting the drinking water source. According to this study, the aquifer that supplies water to WPAFB Areas A and B well fields has a high susceptibility to contamination. This determination is based on the following information: the lack of a protective layer of clay or other material overlying the aquifer, a shallow depth (between 5-15 feet below ground surface) of the aquifer, the presence of significant potential contaminant sources in the protection areas, and the presence of man-made contaminants in the ground water.

Tetrachloroethene was detected within the treated water above the maximum contaminant level (MCL) on 1/10/91, 4/03/91, 5/01/91, and 6/04/91. WPAFB upgraded the treatment systems in 1992. Since that time, all results have been under the MCL for Tetrachloroethene in the treated water. Nitrate was detected in the treated water above the aquifer susceptibility concentration of concern of 2.0 mg/L on some occasions. The Nitrate MCL is 10 mg/L.

The risk of future contamination can be minimized by implementing appropriate protective measures. More information about the source water assessment and what consumers can do to help protect the aquifer is available by contacting American Water at: 937-623-9786.

### **Substances Expected to be in Drinking Water**

The sources of drinking water (both tap water 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 activity.

**Contaminants that may be present in source water include:**

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife.

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.



**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban storm water runoff, and septic systems.

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

In order to ensure that your tap water is safe to drink, the US EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be 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 their potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline at 800-426-4791.

### Information About Lead

#### Is there lead in my water?

Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your plumbing. 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. American Water 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. 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 at <http://www.epa.gov/safewater/lead>

### State of Ohio's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan for Drinking Water

In 2023, our PWS was sampled as part of the State of Ohio's Per- and Polyfluoroalkyl Substances (PFAS) Sampling Initiative. Results from this sampling indicated PFAS were detected in our drinking water below the action level established by Ohio EPA. Follow up monitoring is being conducted. For more information about PFAS, and to view our latest results please visit [pfas.ohio.gov](https://pfas.ohio.gov).

For more information about your system's PFAS results, action levels for PFAS, or if you have any questions, visit <https://pfas.ohio.gov> or email [PFAS.Results@epa.ohio.gov](mailto:PFAS.Results@epa.ohio.gov).

For more information about CCRs please visit <https://epa.ohio.gov/ddagw/pws> and click on the Consumer Confidence Reports tab, or email [CCR@epa.ohio.gov](mailto:CCR@epa.ohio.gov).

### Public Participation Information

The Bioenvironmental Engineering Office and American Water holds a Drinking Water Working Group that meets quarterly to discuss local drinking water issues involving compliance, risk reduction and continuous improvement. Public participation and comments are encouraged and can be discussed at these meetings by contacting American Water.

Thank you for taking time to read our annual Drinking Water Quality Report. If you would like more information about the American Water drinking water quality, or if you have any questions pertaining to the information contained in this report, please contact Scott Darnell, General Manager at (937) 623-9786.

### Ensuring Water Quality

In calendar year 2023, American Water personnel conducted sampling for bacteria, VOCs, IOC's, nitrates, disinfection byproducts, perfluorinated compounds, lead and copper. The Ohio Environmental Protection Agency (OEPA) requires sampling for some contaminants less than once per year because concentrations of these contaminants do not change very often. That is why some of the data may be more than one year old.

### Unregulated Contaminant Monitoring

Unregulated contaminants are those contaminants for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants and whether future regulation is warranted.

## PFAS Monitoring

In 2014 and 2015, OEPA directed sampling for perfluorinated compounds; subsequently, WPAFB's monitoring detected Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) in the Area A distribution system. In discussion with OEPA, WPAFB performed sampling at all active wells in March 2016 and discovered that two of the six wells located in Area A had elevated levels of PFOS/PFOA. In April 2016, monitoring revealed a PFOS level of 110 parts per trillion (ppt) in the distribution system. It was suspected that the source of the PFOS and PFOA chemicals came from firefighting foam used at fire training and crash sites on the base.

On 19 May 2016, the US EPA issued a lifetime drinking water Health Advisory Limit (HAL – classified as a nonenforceable technical guidance) of 70 parts per trillion (ppt) for human exposure to PFOA and PFOS (individually and combined). On 20 May 2016, WPAFB issued a drinking water advisory for Area A informing the public that Area A had a PFOS detection that exceeded the new HAL of 70 ppt. WPAFB initiated monthly monitoring at all wells and entry points for Area A as well as quarterly monitoring for Area B.

Since that time, WPAFB Civil Engineering (CE), Bioenvironmental Engineering (BE), and American Water personnel have been working closely with the OEPA to remediate the contaminant. In June of 2017, Granular Activated Carbon (GAC) Units were installed to remove the contaminant from water being pumped from the contaminated wells. The GAC units were placed online on 2 June 2017. The wells were returned to service at that time.

PFAS refers to per- and polyfluoroalkyl substances, a class of synthetic chemicals, manufactured for industrial applications and commercial household products such as: non-stick cookware; waterproof and stain resistant fabrics and carpets; firefighting foam and cleaning products. The properties that make these chemicals useful in so many of our every-day products also resist breaking down and therefore persist in the environment. Exposure may be from food, food packaging, consumer products, house dust, indoor and outdoor air, drinking water and at workplaces where PFAS are made or used. The science and regulation of PFAS and other contaminants is always evolving, and American Water strives to be a leader in research and development. PFAS contamination is one of the most rapidly changing areas in the drinking water field. We have invested in our own independent research, as well as engaging with other experts in the field to understand PFAS occurrence in the environment. We are also actively assessing treatment technologies that can effectively remove PFAS from drinking water, because we believe that investment in research is critically important to addressing this issue.

### How to Read the Data Tables

Starting with a **Substance**, read across. **Year Sampled** is usually in 2023 or year prior. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **Average Amount Detected** represents the measured amount (less is better). **Range** tells the highest and lowest amounts measured. A **Yes** under **Compliance Achieved** means the amount of the substance met government requirements. **Typical Source** tells where the substance usually originates. Unregulated substances are measured, but maximum allowed contaminant levels have not been established by the government.

### Table Definitions and Abbreviations

- **Action Level:** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- **MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **MCLG (Maximum Contaminant Level Goal):** 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.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- **mrem/year (millirems per year):** a measure of radiation absorbed by the body.
- **MFL (Million Fibers per Liter):** a measure of the presence of asbestos fibers that are longer than 10 micrometers.
- **NA:** Not applicable
- **ND:** Not detected.
- **NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water.



- **pCi/L (picocuries per liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).
- **pH:** A measurement of acidity, 7.0 being neutral.
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
- **ppt (parts per trillion):** One part substance per trillion parts water, or nanograms per liter.
- **RAA (Running Annual Average):** average results for the most recent four quarters.
- **SMCL (Secondary Maximum Contaminant Level):** recommended level for a contaminant that is not regulated and has no MCL.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

#### Definition of Terms Not Used in Everyday Language

Parts Per Million (ppm) are units of measure for concentration of a contaminant. A part per million corresponds to 1 second in approximately 11.5 days.

Parts Per Billion (ppb) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Parts Per Trillion (ppt) are units of measure for concentration of a contaminant. A part per trillion corresponds to one second in 32,000 years.

## Water Quality Results

### REGULATED PARAMETERS (Area A: PWS 2903412 Area B: 2903312)

Contaminant	Year Sampled	Unit of Measure	MCLG	MCL	Area A Level Found	Area A Range of Detections	Area B Level Found	Area B Range of Detections	Compliance Achieved	Typical Source
Residual Disinfectants	Year Sampled	Unit of Measure	MRDL	MRDL G	Area A Level Found	Area A Range of Detections	Area B Level Found	Area B Range of Detection	Compliance Achieved	Typical Source
Total Chlorine	2023	PPM	4	4	1.39	1.25 - 1.49	1.45	1.33 - 1.58	Yes	Water additive used to control microbes
Contaminant	Year Sampled	Unit of Measure	MCLG	MCL	Area A Level Found	Area A Range of Detection	Area B Level Found	Area B Range of Detections	Compliance Achieved	Typical Source
Disinfection Byproducts										
HAA5's	2023	PPB	NA	60	1.6	0 – 3.2	1.9	1.7 – 2.1	Yes	By-product of drinking water chlorination
TTHM's	2023	PPB	NA	80	10.35	4.8 – 15.9	14.5	14.1 – 14.9	Yes	By-product of drinking water chlorination
Inorganic Contaminants										
Barium	2023	PPM	2	2	0.084	0.033 - 0.13	0.0875	0.045 - 0.13	Yes	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate	2023	PPM	10	10	1.625	1.5 - 1.7	0.645	0.64 - 0.65	Yes	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride	2023	PPM	4	4	0.86	0.73 - 1.01	0.85	0.65 - 0.92	Yes	Erosion of natural deposits; Water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Volatile Organic Contaminants										
Ethylbenzene	2023	PPB	700	700	ND	ND - ND	0.0001	ND - 0.0008	Yes	Discharge from petroleum refineries
Total Xylene	2023	PPM	10	10	ND	ND – ND	0.000000 475	ND – 0.0000038	Yes	Discharge from petroleum factories; Discharge from chemical factories
Radioactive Contaminants										
Gross Alpha	2020	pCi/L	0	15	3.05	ND – 3.05	ND	ND	Yes	Erosion of natural deposits
Lead and Copper – Area A										
Contaminants	Action Level			Individual Results Over Action Level		90th Percentile Values		Compliance Achieved	Year Sampled	Typical Source of Contaminants
Lead (PPB)	15 PPB			0		2.1		Yes	2023	Corrosion of household plumbing systems, erosion of natural deposits
	0 of 30 samples were found to have lead levels in excess of the action level									
Copper (PPM)	1.3 PPM			0		0.74		Yes	2023	Corrosion of household plumbing systems, erosion of natural deposits
	0 of 30 samples were found to have copper levels in excess of the action level <sup>1</sup>									
Lead and Copper – Area B										
Contaminants	Action Level			Individual Results Over Action Level		90th Percentile Values		Compliance Achieved	Year Sampled	Typical Source of Contaminants
Lead (PPB)	15 PPB			0		ND		Yes	2023	Corrosion of household plumbing systems, erosion of natural deposits
	0 of 30 samples were found to have lead levels in excess of the action level									
Copper (PPM)	1.3 PPM			0		0.63		Yes	2023	Corrosion of household plumbing systems, erosion of natural deposits
	0 of 30 samples were found to have copper levels in excess of the action level <sup>1</sup>									
Notes:										
1. <b>Action Level:</b> The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.										

## UNREGULATED CONTAMINANTS (Area A: PWS 2903412 Area B: 2903312)

Contaminants	Year Sampled	Unit of Measure	Area A Average	Area A Range of Detections	Area B Average	Area B Range of Detections	Typical Source
Nickel	2020	PPB	1.65	ND – 4.50	1.80	ND – 3.60	Erosion of natural deposits
Bromodichloromethane	2023	PPB	1.65	ND - 4.9	3.88	1.2 - 7.2	Disinfection By-Products
Bromodichloroacetic Acid	2020	PPB	0.535	0.52 – 0.55	1.30	1.1 – 1.5	
Bromoform	2023	PPB	0.22	ND - 1.2	1.03	0.52 - 1.5	
Chloroform	2023	PPB	2.16	ND - 5.6	3.68	0.32 - 15.4	
Dibromochloromethane	2023	PPB	1.31	ND - 4.2	3.55	1.6 - 4.8	
Bromochloroacetic Acid	2021	PPB	1.85	1.7 – 2.0	2.5	1.6 – 3.4	
Chlorodibromoacetic Acid	2020	PPB	0.595	0.58 – 0.61	1.25	1.1 – 1.4	
Dibromoacetic Acid	2023	PPB	ND	ND - ND	1.9	1.7 – 2.1	
Dichloroacetic Acid	2023	PPB	1.6	ND – 3.2	ND	ND - ND	
HAA9 Group	2020	PPB	2.8	2.7 – 2.9	8.8	8.0 – 9.6	
Total Brominated HAAs	2023	PPB	0.317	ND – 1.9	0.983	ND – 2.1	
Total HAA6	2019	PPB	NA	NA	5.19	4.99 – 5.38	
Trichloroacetic Acid	2022	PPB	ND	ND	0.50	ND – 1.0	
Chromium – 6	2015	PPB	0.041	0.04 – 0.05	0.12	0.12 – 0.13	
Strontium	2015	PPB	136	31.7 – 208	370	104 - 506	Naturally occurring element; commercial use in faceplate glass of cathode-ray tube televisions to block x-ray emissions
Molybdenum	2015	PPB	1.62	1.4 – 1.8	3.60	3.5 – 3.7	Naturally occurring element found in ores and present in plants, animals, and bacteria
Chlorate	2015	PPB	33.7	ND – 49.8	ND	NA	Agriculture defoliant or desiccant; used in production of chlorine dioxide
Perfluorohexanesulfonic Acid (PFHxS) <sup>2</sup>	2023	PPT	2.1	ND - 17.5	18.1	ND - 24.5	Synthetic chemical; used in products to make stain, grease; heat and water resistant; also used in firefighting foam
Perfluorooctanoic Acid (PFOA) <sup>2</sup>	2023	PPT	0.3	ND - 5.3	4.8	ND - 7.0	
Perfluorooctanesulfonic Acid (PFOS) <sup>2</sup>	2023	PPT	1.8	ND - 13.5	12.4	ND - 17.2	
Perfluorobutanesulfonic Acid (PFBS)	2023	PPT	1.2	ND - 6.9	2.2	ND - 5.7	
Perfluoroheptanoic Acid (PFHpA)	2023	PPT	0.1	ND - 1.9	0.2	ND - 1.8	
Perfluorohexanoic Acid	2023	PPT	3.1	ND - 16.0	1.6	ND - 3.1	
Manganese	2020	PPT	0.45	ND – 1.4	ND	ND	Naturally occurring element in rocks and soil

### Notes:

1. Unregulated contaminants are those contaminants for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants and whether future regulation is warranted.
2. PFOA and PFOS are sampled monthly at the GAC, Area A Treatment Plant 10855 and Area B Treatment Plant 21630; PFOA and PFOS are sampled quarterly at the Area A Treatment Plant 30172. OEPA does not require sampling for PFHxS.