Your Drinking Water

Safe, reliable drinking water is a basic life necessity. The Tualatin Valley Water District (TVWD) is proud to deliver water to more than 214,000 people every day. We consistently deliver water that complies with all applicable federal and state water quality standards.

Our most recent water quality test results are shown on the following pages. Although the District's water supplies are tested for more than 200 regulated and unregulated contaminants, only those that have been detected in the water are included in this report.

Drinking Water Quality Report and other important information regarding your drinking water supply

Based on water quality data from the calendar year 2018

Tualatin Valley Water District, the Portland Water Bureau and the Joint Water Commission test your water for approximately 200 contaminants. These include contaminants regulated by the EPA, plus many unregulated contaminants. Sampling is conducted at various locations in the water source, the water treatment plant and distribution system. Results are submitted to the Oregon Health Authority's Drinking Water Program, the agency responsible for enforcing the EPA's Safe Drinking Water Act.

If a health related contaminant is not listed in this report, it was not detected.

TUALATIN VALLEY
WATER DISTRICT

You can have confidence in the quality of your drinking water. We consistently deliver water that complies with all applicable federal and state water quality standards. For questions, contact TVWD's Water Resources Division at wq@tvwd.org, (503) 848-3000, or visit TVWD's Web site at tvwd.org.

About Us

TVWD is a special district located in fast-growing Washington County, west of Portland, Oregon. The District provides drinking water to an urbanized portion of Washington County, including the communities of Aloha, Bethany, Cedar Hills, Cooper Mountain, Progress, Metzger and Rock Creek. The District also serves portions of the cities of Beaverton, Hillsboro and Tigard. As the second largest water provider in Oregon, the District provides an average of almost 23 million gallons of water per day to more than 214,000 people, including residential and commercial customers. Major employers such as Intel, Nike, Reser's Fine Foods and Providence St. Vincent Medical Center are TVWD customers.

TVWD is responsible for much more than making sure quality water comes out of your tap. For example, TVWD delivers:

Public health protection
In a world where an estimated 3 million people die every year from preventable waterborne disease, community water systems allow us to drink from any public tap with a high assurance of safety. TVWD water supplies meet rigorous federal and state health protection standards.

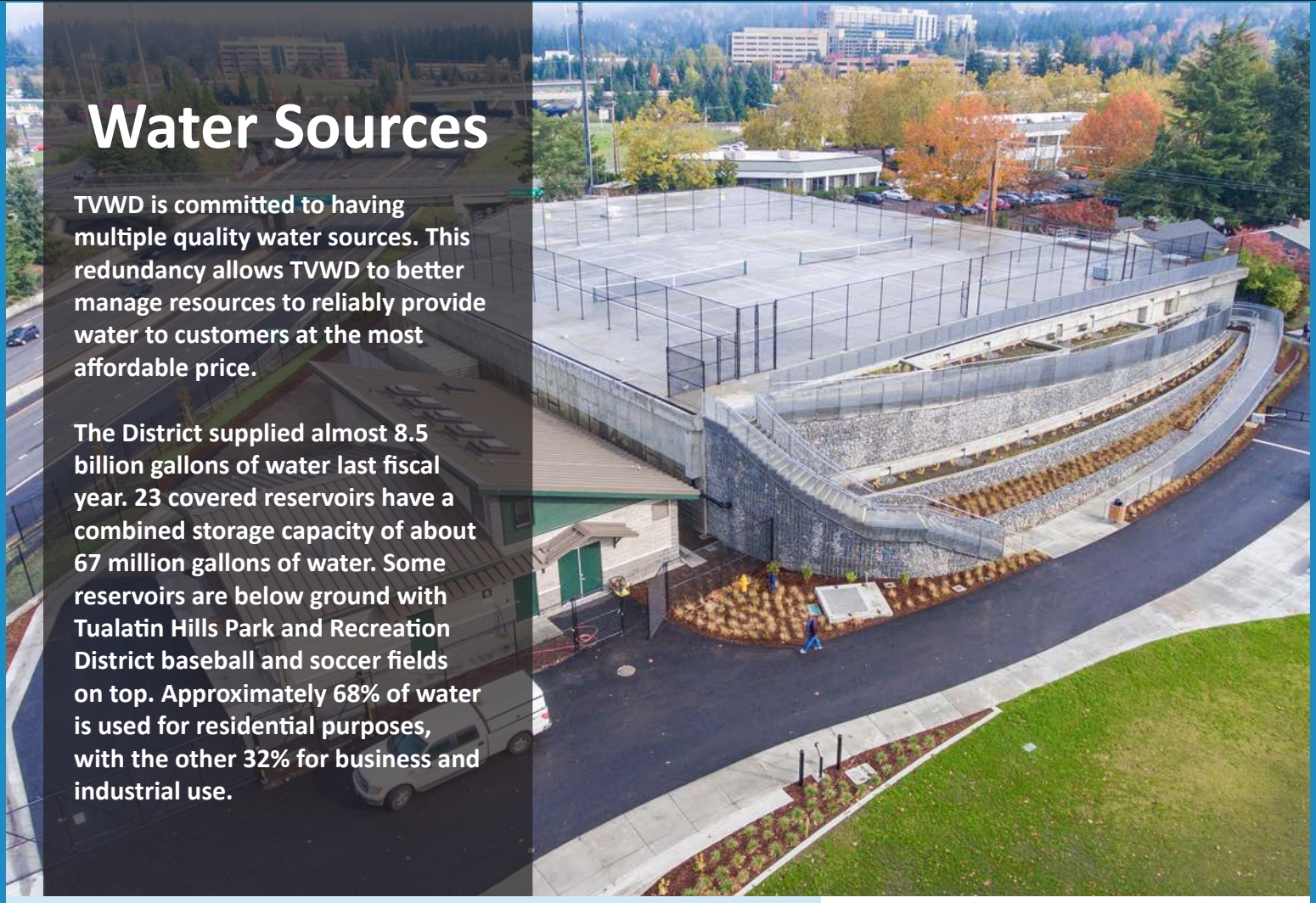
Fire protection
A well-maintained water system is critical in protecting the community from the threat of fire. The ability to suppress fires influences new home construction, business locations and insurance rates.

Support for the economy
Businesses or housing developments succeed where there is a safe and sustainable water supply. Tap water is critical for day-to-day business operations and is often a primary ingredient in the products they manufacture and process.

The overall quality of life we enjoy
It is often taken for granted that safe water is always accessible to drink, to wash clothes, to water lawns and for a myriad of other purposes.

TVWD maintains more than 5,200 fire hydrants and has 7 fire stations within District boundaries.

Water Sources



TVWD is committed to having multiple quality water sources. This redundancy allows TVWD to better manage resources to reliably provide water to customers at the most affordable price.

The District supplied almost 8.5 billion gallons of water last fiscal year. 23 covered reservoirs have a combined storage capacity of about 67 million gallons of water. Some reservoirs are below ground with Tualatin Hills Park and Recreation District baseball and soccer fields on top. Approximately 68% of water is used for residential purposes, with the other 32% for business and industrial use.

Joint Water Commission

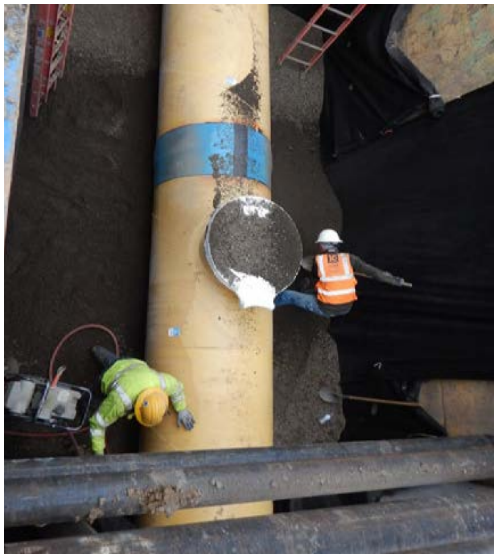
About 27% of TVWD's water comes from the Joint Water Commission (JWC), which is jointly owned by the District and the cities of Beaverton, Hillsboro and Forest Grove. JWC water sources are Hagg Lake and Barney Reservoir, as well as the seasonal flow of the Tualatin River. Water from these sources is treated at the JWC water treatment plant located near Forest Grove. For more information about the JWC, visit www.jwcwater.org.

Portland Water Bureau

About 73% of TVWD's water is purchased from the City of Portland. Portland's primary source is water from the Bull Run watershed in the Mt. Hood National Forest. Portland also uses pumped groundwater from the Columbia South Shore Well Field next to the Columbia River to augment the Bull Run supply when needed. For more information about the Portland Water Bureau, visit www.portlandonline.com/water.

Aquifer Storage and Recovery (ASR)

During the winter when water is plentiful, TVWD stores treated drinking water underground in the aquifer surrounding the Grabhorn well on Cooper Mountain. During the hot summer months, the stored water is pumped from the aquifer to help meet peak water demands. The Grabhorn ASR well is capable of storing in excess of 300 million gallons of treated water. For more information about aquifer storage and recovery, visit www.asrforum.com.



Willamette Water Supply Program

TVWD and the City of Hillsboro continue to work on developing the mid-Willamette River at Wilsonville as an additional regional water supply source. This new, reliable water supply for Washington County is on-schedule to deliver drinking water to more than 400,000 Washington County residents and businesses in 2026.

Quality Water

"Contaminant" refers to any substance that may be found in water. As water travels over the surface or seeps through the ground, it dissolves naturally occurring materials. It can also pick up substances from animal or human activities.

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. One measure used to determine that tap water is safe includes drinking water standards. These standards are set by the EPA and limit the amount of certain contaminants that can be present in water provided by community water systems. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791). The Food and Drug Administration (FDA) is responsible for bottled water requirements.

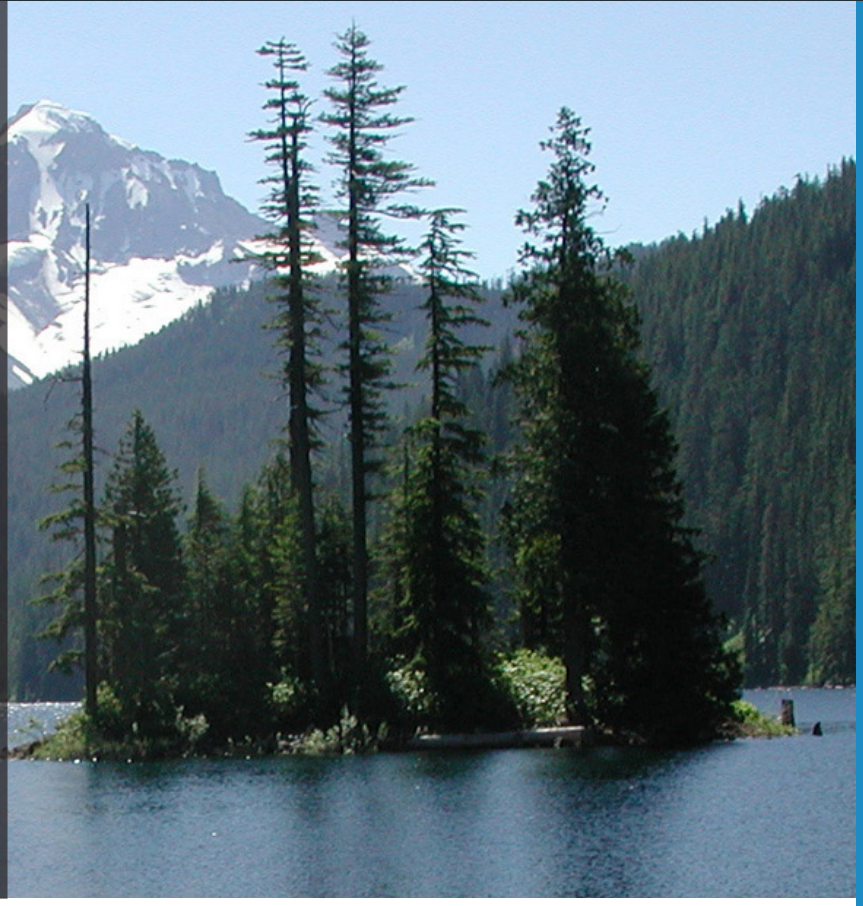
Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria which may come from sewage treatment plants, septic systems, livestock, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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

The source of any drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, or 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.

Source Water Protection



Surface water (streams, rivers, and lakes) or ground water (aquifers) can serve as sources of drinking water, referred to as source water. Protecting source water from contamination can reduce treatment costs, which also reduces risks to public health from exposures to contaminated water.

Source water assessments provide water utilities, community governments and others with information needed to protect drinking water sources.

In September and October of 2017, the Oregon Health Authority completed a Water System Survey of Tualatin Valley Water District. A System Survey is an on-site review of a water system's sources, treatment, storage facilities, distribution system, operation and maintenance procedures, monitoring, and management, for the purpose of evaluating the system's capability of providing safe water to the public. System facilities were found to be well operated and maintained by knowledgeable and competent staff with no significant deficiencies or rule violations. The next survey will take place in 2020.

The Department of Environmental Quality (DEQ) and the Oregon Health Authority (OHA) completed a source water assessment that identified the surface areas supplying water to the Joint Water Commission (JWC) treatment plant. They also inventoried the potential contaminant sources that may affect the water supply. A total of 306 potential contaminant sources were identified and 295 of those sources are located in sensitive areas. Sensitive areas include places with high soil permeability, high soil erosion potential, high run-off potential, and areas within 1,000 feet of a river or stream. Potential sources of watershed contamination include the following: agricultural/forest management applications, commercial land uses, residential/municipal land uses, and landslide and clear-cut forest areas. These are the existing potential sources of contamination that could, if improperly managed or released, affect the water quality in the watershed. The JWC-Cherry Grove Source Water Assessment Report provides additional details on the methodology and results of this assessment. The full report is available for review at jwcwater.org/water-sources/source-water-protection, the Hillsboro Water Department, 150 East Main Street, Hillsboro, or by calling (503) 615-6702.

The Portland Water Bureau has completed a Source Water Assessment for the Bull Run water supply to comply with the 1996 Safe Drinking Water Act Amendments. The only contaminants of concern for the Bull Run water supply are naturally occurring microbial contaminants such as *Giardia lamblia*, *Cryptosporidium*, fecal coliform bacteria and total coliform bacteria. These are found in virtually all freshwater ecosystems and may be present in the Bull Run supply at very low levels. The Bull Run supply complies with all applicable state and federal regulations for source water, including the 1989 Surface Water Treatment Rule filtration-avoidance criteria. The Source Water Assessment Report is available at www.portlandoregon.gov/water/sourcewaterassessment and by calling (503) 823-7404.

Lead and Copper

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. TVWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

In compliance with federal requirements, TVWD, along with water source providers, takes actions to reduce customers' exposure to lead and copper in drinking water. These include corrosion control, source water treatment and public education.

While there is no Maximum Contaminant Level (MCL) for lead or copper, the federal government identifies "action levels" that trigger certain actions by the water provider. The action level is based on the 90th percentile. This means that 90 percent of the samples must meet or be under the defined action level. The action level for copper is 1.3 parts per million (ppm) and the action level for lead is 15 parts per billion (ppb).

Ways to reduce lead include:

- Run your water to flush the lead out. If the water has not been used for several hours, run each tap for 30 seconds to 2 minutes or until it becomes colder before drinking or cooking.
- Use cold, fresh water for cooking and preparing baby formula. Do not cook, prepare baby formula or drink water from the hot water tap. Lead dissolves more easily into hot water.
- Do not boil water to remove lead. Boiling water will not reduce lead.
- Consider using a filter. Check whether it reduces lead – not all filters do. Be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality. Contact NSF International at 800-NSF-8010 or www.nsf.org for information on performance standards for water filters.
- Test your water for lead. Contact the LeadLine at www.leadline.org or 503-988-4000 to get a FREE test.
- Test your child for lead. Ask your physician or call the LeadLine to find out how to have your child tested for lead. A blood lead level test is the only way to know if your child is being exposed to lead.
- Regularly clean your faucet aerator. Particles containing lead from solder or plumbing can become trapped in your faucet aerator. Cleaning every few months will remove these particles and reduce your exposure.
- Consider buying low-lead fixtures. As of January 2014, all pipes, fittings and fixtures are required to contain less than 0.25% lead. When buying new fixtures, consumers should seek out those with the lowest lead content.

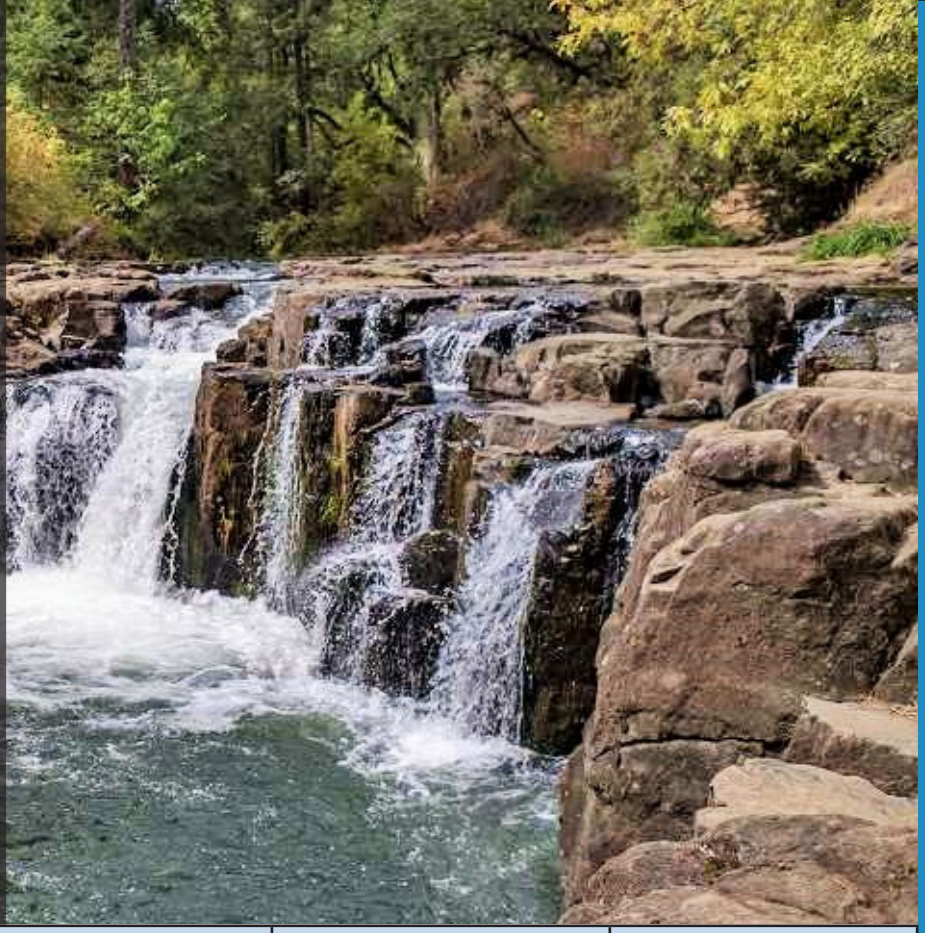
Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available at tvwd.org/lead, from the Lead Line at (503) 988-4000 or leadline.org, the Safe Drinking Water Hotline at (800) 426-4791, or epa.gov/safewater/lead.

Lead results are listed on the following page.

Metals and Minerals

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring metals and minerals. Metals and minerals can also result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Acronyms and terms are explained on the glossary of terms page



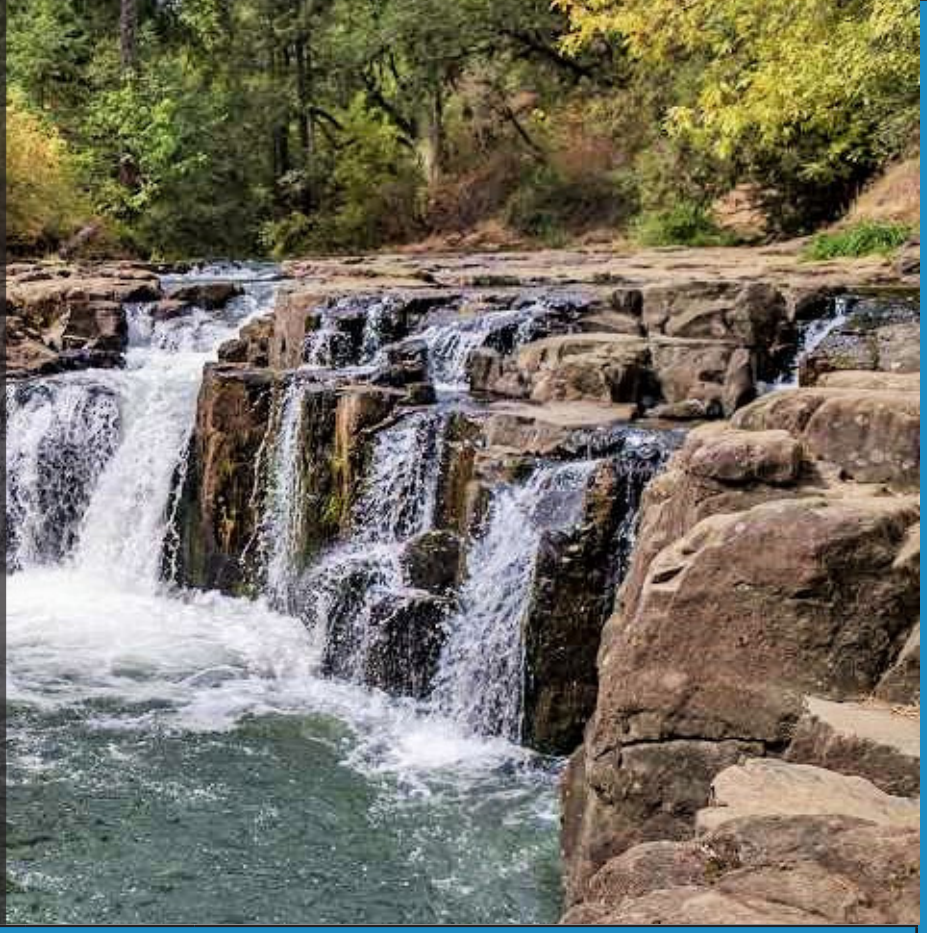
Contaminant	MCLG	90th Percentile Values	Number of Sites Exceeding Action Level	Lead & Copper Rule Exceedance	Major Sources
Lead (monitoring program)	0 ppb	10 ppb	6 of 99 samples (6.1%) exceeded the 15 ppb action level	If more than 10% of homes tested had levels greater than 15 ppb	Corrosion of building, household and commercial plumbing
Copper	1.3 ppm	0.274 ppm	0 samples exceeded 1.3 ppm action level	If more than 10% of homes tested had levels greater than 1.3 ppm	Corrosion of building, household and commercial plumbing

Contaminant	Unit of Measurement	Amount Detected	MCL	MCLG	Major Sources
Arsenic	ppb	0.0005 - 1.31	10	0	Erosion of natural deposits
Barium	ppm	.00074 - 0.012	2.0	2.0	Erosion of natural deposits
Chromium (total)	ppb	ND - 0.000688	100	100	Erosion of natural deposits
Copper	ppm	ND - 0.00071	Not applicable	1.3	Erosion of natural deposits
Fluoride	ppm	up to 0.70	4	4	A water additive that promotes strong teeth; erosion of natural deposits.
Lead (source water)	ppb	0.0005 - 0.0032	Not applicable	0	Erosion of natural deposits
Nitrate	ppm	0.01 - 0.591	10	10	Runoff from fertilizer use; leaking from septic tanks and sewage; erosion of natural deposits
Hexachlorocy-lopentadiene	ppm	ND - 0.00014	0.05	0.05	Agricultural runoff

Continued

Metals and Minerals (Continued) and Unregulated Contaminants

Acronyms and terms are explained on the glossary of terms page



Secondary Standards				
Contaminant	**Unit of Measurement**	**Amount Detected**	**Secondary MCL**	**Major Sources**
Chloride	ppm	2.15 - 6.4	250	Erosion of natural deposits
Iron	ppm	ND - 0.197	0.30	Erosion of natural deposits
Sulfate	ppm	0.35 - 14.6	250	Erosion of natural deposits

Unregulated Contaminants			
Contaminant	**Unit of Measurement**	**Range Detected**	**Major Sources**
Alkalinity	ppm	10.0 - 29.0	Erosion of natural deposits
Calcium	ppm	1.7 - 13.0	Erosion of natural deposits
Hardness as Calcium Carbonate (CaCO3)	Grains per Gallon	0.4 - 4.6	Erosion of natural deposits
Magnesium	ppm	0.65 - 6.43	Erosion of natural deposits
Phosphorus	ppm	<0.01 - 0.07	Erosion of natural deposits
Potassium	ppm	0.19 - 1.6	Erosion of natural deposits
Radon	pCi/l	<50 - 560 Groundwater Aquifers	Radon is a naturally occurring radioactive gas that cannot be seen, tasted or smelled. For more information about Radon, visit www.epa.gov/radon/rnwater.html or call 800-SOS-RADON.
Silica	ppm	4.0 - 34.0	Erosion of natural deposits
Sodium	ppm	3.4 - 16.0	Erosion of natural deposits

Microbiological

As water flows, it can pick up substances resulting from the presence of animals or human activity. Microbial contaminants, such as viruses and bacteria may come from sewage treatment plants, septic systems, livestock, and wildlife.

Acronyms and terms are explained on the glossary of terms page

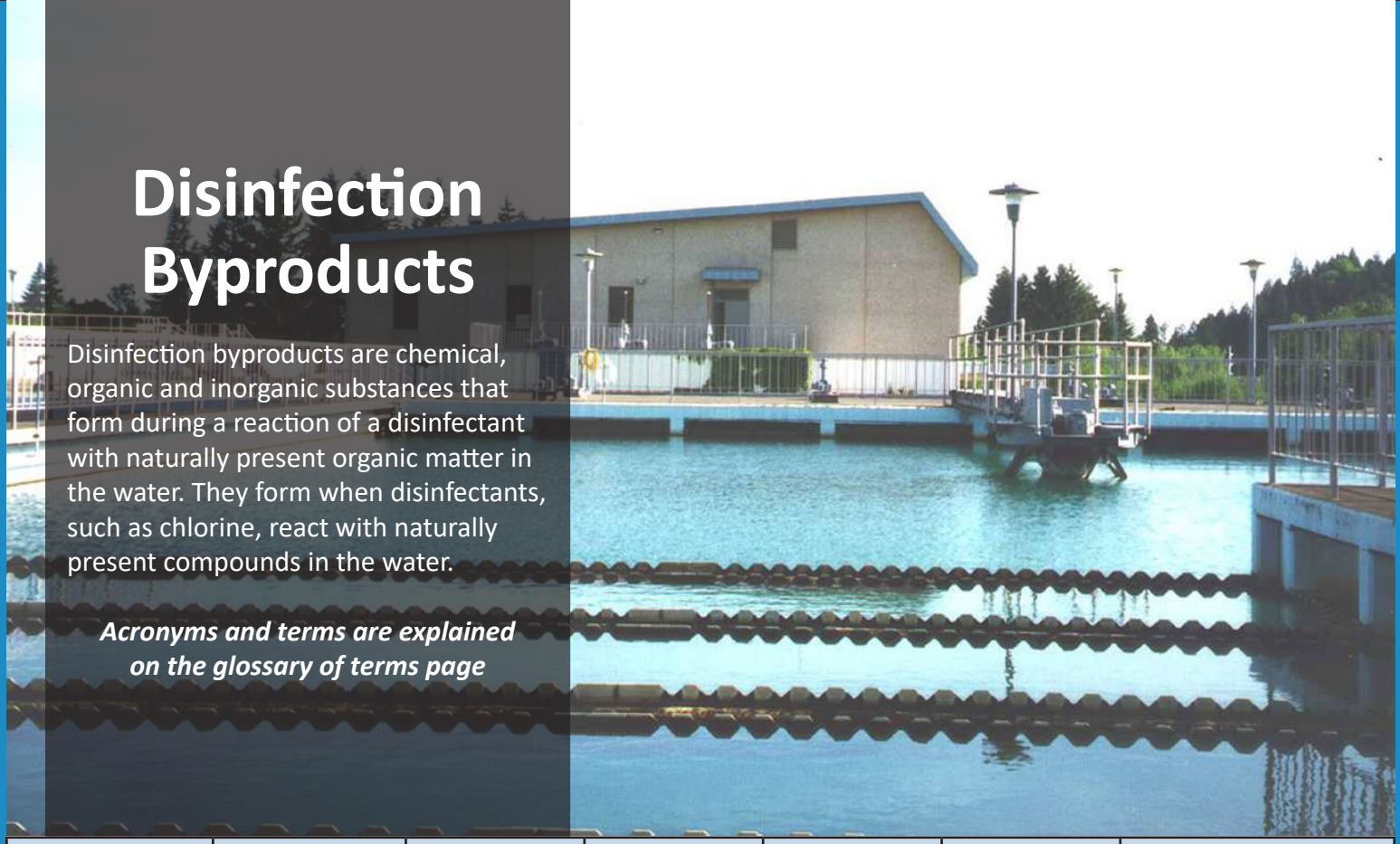
Contaminant	Unit of Measurement	Amount Detected	MCL or TT	MCLG	Major Sources
Crypto-sporidium*	Presence or absence	19 detections out of 271 samples in 7,690 total liters of water (Portland Water Bureau)	Treatment technique required as of April 1, 2012	Not applicable	Animal Wastes
Fecal Coliform Bacteria**	Presence or absence	ND	At least 90% of samples measured during the previous six months must have 20 or fewer bacterial colonies per 100 milliliters of water	Not applicable	Animal Wastes
Total Coliform Bacteria	Percentage of monthly samples	2 of 1,830 samples (0.11%) collected each month had detectable coliform bacteria	5% of monthly samples with detectable coliform bacteria	0 bacteria detected	Naturally present in the environment
Giardia**	Presence or absence	ND - 0.18 Cysts/L	Disinfection to kill 99.9% of cysts	Not applicable	Animal Wastes
Turbidity Unfiltered	NTU	0.19 - 1.01 (Portland Water Bureau)	Cannot exceed 5 NTU two times in 12 months	Not applicable	Soil runoff, erosion of natural deposits
Filtered		0.02 - 0.43 (Joint Water Commission)	Less than or equal to 0.3 NTU in 95% of measurements taken each month.		

*The Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under the drinking water regulations. Portland is working to install a filtration system by 2027 under a compliance schedule with Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who have compromised immune systems and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water. For more information, visit portlandoregon.gov/water.

**Tested in the Portland Water Bureau's Bull Run Watershed. All detections were from pre-treated raw water. As part of Portland's compliance with the filtration avoidance criteria of the Surface Water Treatment Rule, water is tested for fecal coliform bacteria before disinfectant is added. This is measured in percent of samples with more than 20 colonies in 100 milliliters of water during any six-month period. Chlorine is added to the water to kill these bacteria.

Disinfection Byproducts



Disinfection byproducts are chemical, organic and inorganic substances that form during a reaction of a disinfectant with naturally present organic matter in the water. They form when disinfectants, such as chlorine, react with naturally present compounds in the water.

Acronyms and terms are explained on the glossary of terms page

	Unit of Measurement	Minimum Detected	Maximum Detected	MCL	MCLG	Major Sources
Total Trihalomethanes						
LRAA	ppb	28.0	37.0	80	Not applicable	Byproduct of drinking water disinfection
Single result at any one site		15.9	62.6	Not applicable		
Haloacetic Acids						
LRAA	ppb	20.0	30.0	60	Not applicable	Byproduct of drinking water disinfection
Single result at any one site		0.49	41.6	Not applicable		
Free Chlorine and Chloramines						
RAA	ppm	0.95	1.21	4.0 (MRDL)	4.0 (MRDLG)	Additive used to disinfect water
Single result at any one site		0.00	2.04	Not applicable	Not applicable	

Fourth Unregulated Contaminant Monitoring Rule

The 1996 Safe Drinking Water Act (SDWA) amendments require that once every five years, the EPA issues a new list of no more than 30 unregulated contaminants to be monitored by public water systems. The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) was published in the Federal Register on December 20, 2016. UCMR 4 requires monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring provides a basis for future regulatory actions to protect public health.

What contaminants are systems monitoring for under UCMR 4?
UCMR4 included ten cyanotoxin contaminants, two metals, eight pesticides, one manufacturing byproduct, three brominated haloacetic acid groups, three alcohols, three semi-volatile chemicals, and two indicators. Samples were collected at entry points to the TVWD distribution system and at various sites within the TVWD distribution system.

What are the public health benefits of the UCMR program?
The UCMR program provides the EPA and other interested parties with nationally representative data on the occurrence of particular contaminants in drinking water, the number of people potentially being exposed, and an estimate of the levels of that exposure. In accordance with the SDWA, the EPA will consider the occurrence data from UCMR 4 and other sources, along with the peer reviewed health effects assessments, to support a regulatory determination on whether to initiate the process to develop a national primary drinking water regulation.

Contaminant	Unit of Measurement	Amount Detected	Major Sources
HAA5	ppb	8.7 - 34	Byproduct of drinking water disinfection
IHAA6Br	ppb	0.3 - 4.4	Byproduct of drinking water disinfection
HAA9	ppb	10.01 - 38.4	Byproduct of drinking water disinfection
Manganese	ppb	ND - 19	Erosion of natural deposits

For more information, visit eps.gov/dwucmr or call 1-800-426-4791

Cyanotoxins and Harmful Algal Blooms

Harmful algal blooms (HABs) occur when cyanobacteria begin to grow rapidly and produce toxic compounds, called cyanotoxins. It's important to understand that cyanobacteria, more commonly known as blue-green algae, occur naturally and typically in small numbers in lakes, rivers, and streams. Toxin production can vary between blooms and within an individual bloom over time. Not all HABs produce cyanotoxins, which makes prediction difficult and supports the need for active monitoring programs.

In 2018, the Oregon Health Authority (OHA) began requiring some water systems to test for cyanotoxins produced by blue-green cyanobacteria. The Joint Water Commission (JWC), and providers who receive water from the JWC tested for cyanotoxins in 2018 in accordance with OHA requirements. Testing required by OHA in 2018 was concurrent with the Environmental Protection Agency's Unregulated contaminants Monitoring Rule (UCMR4), which required testing for cyanotoxins at different locations throughout the TVWD water system. Neither the JWC, nor any agencies serving JWC water, detected any cyanotoxins in the drinking water during 2018 testing. The JWC will test fo cyanotoxins again in 2019. For more information on cyanotoxins and testing requirements, please visit tvwd.org/cyanotoxins.

Contaminant	Amount Detected	Contaminant	Amount Detected
Total Microsystins	ND	**Microcystin-LR**	ND
Microcystin-LA	ND	**Microcystin-LY**	ND
Microcystin-RR	ND	**Nodularin**	ND
Microcystin-LF	ND	**Cylindrospermopsin**	ND
Microcystin-YR	ND	**Anatoxin-a**	ND

For more information, visit tvwd.org/cyanotoxins

Glossary of Terms

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

EPA: Environmental Protection Agency, the federal agency that sets drinking water contaminant levels.

HAAs: Haloacetic Acids. A combination of chemicals that are tested for that make up the Disinfection Byproduct (DBP) Rule.

LRAA: Locational Running Annual Average. The continual running average from each previous sample site. This is a more stringent and accurate measurement than taking cumulative running annual averages from all sample sites.

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. MCLs are set at very stringent levels. A person would have to drink two liters of water at the MCL level every day for a lifetime to have a one in one million chance of having the associated health effects.

MCLG: Maximum Contaminant Level Goal. The level of 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 allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal. The level of a 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 contaminants.

ND: Non-detection. No presence of a contaminant was detected.

NTU: Nephelometric turbidity units, a measure of turbidity.

pCi/L: Picocuries per liter, a measure of radioactivity.

ppb: Parts per billion. One ppb means that one part of a contaminant is present for every one billion (1,000,000,000) parts of water. One ppb is equivalent to one inch in 16,000 miles, One second in 32 years and One cent in $10 million.

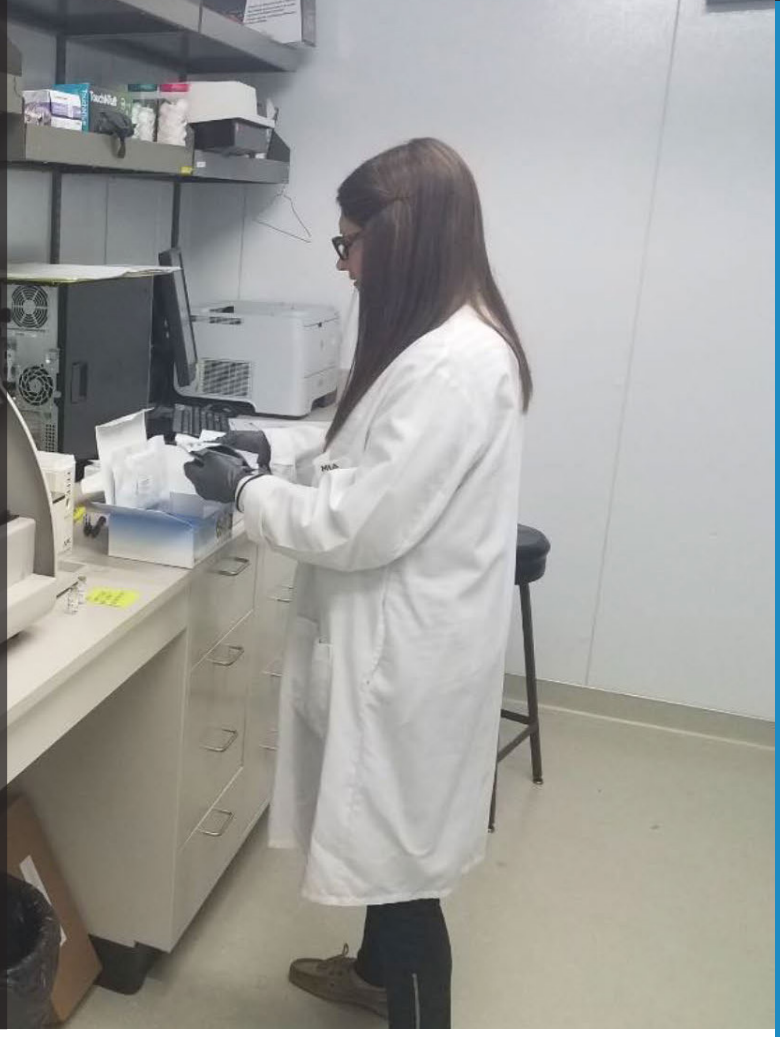
ppm/mg/L: Parts per million/milligram per liter. One ppm means that one part of a particular contaminant is present for every one million (1,000,000) parts of water. One ppm is equivalent to one inch in 16 miles, one minute in two years and one cent in $10,000.

RAA: Running Annual Average. The average result from quarterly samples taken within the distribution system. This average is used to determine MCL compliance.

TT: Treatment technique; a required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A measure of the light-scattering particulate in the water, or how clear the water is.

Notes on Contaminants



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, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater 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 stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Arsenic, Barium, Fluoride, and Vanadium
These metals are found in the earth's crust. They can dissolve into water that contacts these natural deposits. At the levels found in Portland's drinking water, they are unlikely to contribute to adverse health effects.

Radon
Radon is a naturally occurring radioactive gas that cannot be seen, tasted or smelled. Radon can be detected at varying levels in groundwater. Based on the historical levels of radon in groundwater combined with the limited amount of groundwater used, radon is unlikely to contribute to adverse health effects. For information about radon, call the EPA's Radon Hotline (800-SOS-RADON) or www.epa.gov/radon.

Sodium
There is no drinking water standard for sodium. Sodium is an essential nutrient. At the levels found in drinking water, it is unlikely to contribute to adverse health effects.

Disinfection Byproducts
During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally occurring organic matter in the water. These byproducts can have negative health effects. Trihalomethanes and haloacetic acids are regulated disinfection byproducts that have been detected in Portland's water. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts.

Nitrate - Nitrogen
Nitrate, measured as nitrogen, can support microbial growth,such as bacteria and algae. Nitrate levels exceeding the standards can contribute to health problems. At the levels found in Portland's drinking water, nitrate is unlikely to contribute to adverse health effects.

Fecal Coliform Bacteria
The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. The Portland Water Bureau uses chlorine to kill these bacteria.

Giardia
Wildlife in the watershed may be hosts to *Giardia*, the organism that causes giardiasis. The Portland Water Bureau uses chlorine to control these organisms.