














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 potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1-800-426-4791).

Parameter/Constituent	UNITS	MCL (TT)	MCLG	MDL	Portland Water Bureau*		Joint Water Commission		Aquifer Storage and Recovery (ASR)		Typical Source of Contamination	COMPLIANCE MET
					DETECTION RANGE	DETECTION RANGE	DETECTION RANGE	DETECTION RANGE				
INORGANICS												
Fluoride ¹	mg/L	4	4	0.1	<0.025	0.14	ND	ND	0.55	0.62	A water additive that promotes strong teeth; erosion of natural deposits	
Barium	mg/L	1	2	0.1	0.00082	0.0135	0.0041	0.005	0.00331	0.0035	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	
Nitrate (as Nitrogen)	mg/L	10	1	0.4	<0.010	0.054	0.04	0.32	0.26	0.521	Agricultural runoff; leaching from septic tanks, sewage; erosion of natural deposits	
Lead (from source water)	µg/L	--	0	0.2	<0.00005	<0.00005	ND	ND	ND	ND	Erosion of natural deposits	
Copper (from source water)	mg/L	--	1.3	0.05	<0.00005	<0.00005	ND	ND	ND	ND	Erosion of natural deposits	
ADDITIONAL TESTING												
Turbidity - Unfiltered	NTU	5	--	0.1	0.19	1.32	NA	NA	NA	NA	Soil runoff; erosion of natural deposits	
Turbidity - Filtered	NTU	0.3	--	0.1	NA	NA	0.02	0.13	0.01	0.16	Soil runoff; erosion of natural deposits	
Sodium	mg/L	--	--	0.01	3.32	13	10.1	11.2	10.8	11.5	Erosion of natural deposits	
Manganese	mg/L	50	--	0.025	0.0017	0.01	ND	0.91	0.00002	0.00088	Erosion of natural deposits	
RADIOLOGICAL												
Radon ²	pCi/L	300	0	50	<50	280	NA	NA	190	220	Naturally occurring radioactive gas	
MICROBIOLOGICAL												
Fecal Coliform Bacteria (% >20 colonies/100mL in 6 months)	Present/Absent	TT	10%	--	ND	0	NA	NA	NA	NA	Human and animal fecal waste	
Cryptosporidium(oocysts/L) ³	Present/Absent	TT	0	--	ND	0.06	NA	NA	NA	NA	Human and animal fecal waste	
Giardia (cysts/L) ⁴	Present/Absent	TT	--	--	ND	0.08	NA	NA	NA	NA	Human and animal fecal waste	



Portland Water Bureau

Last fiscal year, TVWD purchased about 5.95 billion gallons (72%) of water 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 portlandonline.com/water.



Joint Water Commission








Last fiscal year, about 2.37 billion gallons (28%) of water came 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 jwcwater.org.



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 TVWD's ASR use, visit tvwd.org/sources.

CONTAMINANTS TESTED IN TVWD DISTRIBUTION SYSTEM

Parameter/Constituent	UNITS	MCL	MCLG	MDL (MRDL)	LRAA (RAA)	Single Site Result	Typical Source of Contamination	COMPLIANCE MET
DISINFECTION BY-PRODUCTS						MIN.		
Total Trihalomethanes (THMs)⁵	ppb	80	--	1.0	33.0	64.2	By-product of drinking water disinfection	
Haloacetic Acids (HAAs)⁵	ppb	60	--	1.0	24.0	35.7	By-product of drinking water disinfection	
Free Chlorine and Chlormaine	ppm	4	4	0.1	1.13	2.16	Water additive used to control microbes	
Parameter/Constituent	UNITS	MCL (AL)		MIN. % POSITIVE	MAX. % POSITIVE		Typical Source of Contamination	COMPLIANCE MET
MICROBIOLOGICAL								
Total Coliform Bacteria % Positive	%	+	--	0	1.9	--	Naturally present in the environment	
Fecal Coliform Bacteria % Positive	%	+	--	0	0	--	Human and animal fecal waste	
Parameter/Constituent	UNITS	MCL (AL)	MCLG	MDL	90th% ⁶	Homes Exceeding Action Level	Typical Source of Contamination	COMPLIANCE MET
LEAD AND COPPER <i>(results from high-risk homes⁶)</i>								
Lead - Customer Taps	ppb	15	0	0.2	12	7 of 114 (6.1%)	Corrosion of household and commercial plumbing systems.	
Copper - Customer Taps	ppm	1.3	1.3	0.05	0.199	0 of 114 (0%)	Corrosion of household and commercial plumbing systems.	

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers. EPA/CDC 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).

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. Tualatin Valley Water District 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 epa.gov/safewater/lead.

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.

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

µg/L: micrograms per liter. 1 µg = 1 ppb

µS/cm: microsiemens per centimeter is a unit in the category of Electric conductivity

Conductivity: A measure used to characterize the amount of dissolved ions (minerals and salts) in a solution

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

Fecal Coliform Bacteria: The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes.

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.

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.

MDL: The level at which the contaminant can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

mg/L: milligrams per liter. 1 mg/L = 1 ppm

MRDL: Maximum Residual Disinfectant Level. The highest level of disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

NA: Denotes that testing was not required or was not applicable for a particular water source.

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

NTU: Nephelometric turbidity units, a measure of turbidity. Nephelometric turbidity units, a measure of turbidity.

OHA: Oregon Health Authority

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

pH: TVWD follows OHA guidelines and monitors pH at entry points and throughout the distribution system to verify levels stays above the minimum water quality standard of 7.4. For more information about pH levels in TVWD's system and source waters, please visit tvwd.org/water-quality.

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. 1 ppb = 1 µg/L

ppm: Parts per million. One ppm means that one part of a particular contaminant is present for every one million (1,000,000) parts of water. 1 ppm = 1 mg/L

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.



1. TVWD fluoridates the Wolf Creek portion of the District at 0.7 milligrams per liter (mg/L) in accordance with the proposed guidance of the US Department of Health and Human Services. The District uses sodium fluoride manufactured specifically for drinking water. If you live in an area served by TVWD that is fluoridated, this information is noted on your water bill.

2. Radon is a naturally occurring radioactive gas that cannot be seen, tasted, or smelled. Some ground water sources may contain radon, however radon is not a concern in water that comes from lakes, rivers, and reservoirs (called surface water), because the radon is released into the air before it ever arrives at your tap. For more information visit epa.gov/radon or call 800-SOS-RADON.

3. The Portland Water Bureau does not currently treat for *Cryptosporidium* but is required to do so under drinking water regulations. Portland is will install a filtration system in 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, the general public does 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.

4. 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 fecal bacteria colonies in 100 milliliters of water during any six-month period. Chlorine is added to the water to kill 99.9% of *Giardia* cysts.

5. 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.

6. "High risk" are homes built between 1982 - 85 with lead solder in plumbing.

+ Less than 5% of monthly samples with detectable coliform bacteria. At least 90% of samples measured during the previous six months must have 20 or fewer fecal bacterial colonies per 100 milliliters of water.

++ 90th percentile value for lead and copper. This means that 90 percent of the sample results were less than the values shown.

* Water from Portland Water Bureau includes surface water primarily from the Bull Run watershed as well as groundwater from the Columbia South Shore Well Field. The blend is seasonal and may contain as much as 30% groundwater.






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.

In 2005, the Department of Environmental Quality and the Oregon Health Authority (OHA) conducted a source water assessment for the watershed for the JWC. The assessment identified and inventoried surface areas supplying water to the intake structures collecting water on the Tualatin River, and potential contaminant sources that may affect the water supply. A total of 306 potential contaminant sources were identified. Of those, 295 sources were in sensitive areas with high soil permeability, high soil erosion potential, high runoff potential, and areas within 1,000 feet of a river or stream. Potential sources of watershed contamination include agricultural/forest management applications, commercial land uses, residential/ municipal land Definitions: Water Quality Terms 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 full report is available for review at jwcwater.org/water-sources/source-water-protection or by calling (503) 615-6702.

A Source Water Assessment completed by the Portland Water Bureau in 2003 identifies the only contaminants of concern as naturally-occurring microbes such as Giardia, Cryptosporidium, fecal coliform bacteria, and total coliform bacteria. These organisms are found in virtually all freshwater ecosystems and may be present in the Bull Run supply at low levels. The Bull Run Watershed is an unfiltered drinking water source that is currently not treated for Cryptosporidium. However, the Portland Water Bureau is working to install drinking water filtration by September 2027. More information is available at portlandoregon.gov/water/sourcewaterassessment or by calling 503-823-7525.

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, 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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

