

2019 Annual Water Quality Report

DRINK SMART—DRINK TAP!



We're Here for YOU, Through Every Emergency

A Message about COVID-19 to Our Water Customers

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We have all experienced an unprecedented public health crisis as a result of the coronavirus global pandemic. The city has been actively tracking and responding to this emergency by protecting and isolating essential workers so they can safely do their jobs to keep your water safe and available 24/7.

YOUR WATER IS SAFE

The treatment process we use is specifically designed to kill viruses, and this includes the COVID-19 virus. Find out more from the Environmental Protection Agency:

[epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater](https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater) and the Centers for Disease Control: [cdc.gov/coronavirus/2019-ncov/php/water.html](https://www.cdc.gov/coronavirus/2019-ncov/php/water.html) about COVID-19 and drinking water.

WE'LL KEEP THE WATER ON

Water is a key element to staying healthy and safe during the COVID-19 pandemic. We want to assure you that water service is reliable and will continue to flow to your tap during this pandemic.

WE'RE HERE TO HELP

The Tigard AID Program provides relief from city fees and charges during the COVID-19 Pandemic. As our community comes together in response to COVID-19, the city has taken steps to ensure customers have uninterrupted access to utility services, assistance is available to those who need it, and our utilities remain financially sound.

For more information:
www.tigard-or.gov/aid • 503-639-3572
or UBaid@tigard-or.gov

TIGARD AID



Assistance Programs | Immediate Relief | Delayed Increases

Where Does Tigard's Water Come From?

SOURCE INFORMATION

In 2019, Tigard's drinking water system delivered water from the Lake Oswego-Tigard Water Treatment Plant with a supplemental summer supply from groundwater wells.

The Clackamas River begins in Mount Hood National Forest, drawing from a watershed area of 940 square miles. Water is withdrawn from the Clackamas River, pumped through a pipeline buried beneath the Willamette River, and treated at the Lake Oswego-Tigard Water Treatment Plant in West Linn. The water goes through a robust treatment process that includes filtration to remove dirt and organisms, ozone to remove substances that affect how the water tastes and smells, and disinfection to kill organisms and protect the water as it goes through the distribution system.

Lake Oswego-Tigard Water Treatment Plant

The treatment plant in West Linn is the heart of the water system, receiving water from the Clackamas River and treating it to exceed safe drinking water standards before being distributed to Lake Oswego and Tigard customers.

Groundwater

During periods of high water demand, Tigard supplements its supply with water from two city-owned aquifer storage and recovery wells, and a native groundwater well.



WATER SYSTEM INFORMATION

The Purpose of this Report

The City of Tigard is responsible for providing a clean, safe, dependable supply of drinking water to over 60,000 residents in the Tigard Water Service Area (TWSA). This service area includes the cities of Durham, King City, two-thirds of Tigard and the Tigard Water District. Each entity has representation on the Water Advisory Board. The board offers expert guidance to the Tigard City Council on water-related matters.

This report summarizes **Tigard's 2019 water quality data**. Additional information is included to inform, educate and update consumers on water issues affecting the community.

Have a question about this report?

- ▶ Contact Environmental Program Coordinator Jennifer Joe at 503-718-2599 or jennifer@tigard-or.gov.
- ▶ Habla Español? Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Information on Detected Substances

In 2019, water delivered to the TWSA met or surpassed all regulatory requirements.

More than 90 contaminants are regularly sampled, both before and after the water is treated, to ensure it meets the more than 120 water quality standards for drinking water set by the Environmental Protection Agency (EPA) and the State of Oregon. **If a known health-related contaminant is not listed in this report, it was not detected in the drinking water.**

REGULATED CONTAMINANTS

Chlorine is added to maintain disinfection requirements throughout the water distribution system.

Disinfection Byproducts – Haloacetic Acids (HAA) and Total Trihalomethanes (THM) form through chemical reactions between chlorine and naturally occurring organic matter in the water. The careful control of the disinfection process keeps byproduct levels

to a minimum, while maintaining the required levels of chlorine.

Nitrates are formed through the erosion of natural deposits, agricultural activity and leaching of septic tanks.

Total Coliform Bacteria are naturally present in the environment and may indicate other potentially harmful bacteria may be present. Chlorine is added to the drinking water supply to kill these bacteria.

Turbidity is a measure of the amount of sediment suspended in the water. This sediment can interfere with disinfection and provide a medium for microbial growth. Large storm events can result in increased turbidity.

To learn about the health effects of contaminants, visit the Oregon Health Authority website at:

<http://www.oregon.gov/oha/PH/HealthyEnvironments/DrinkingWater/Pages/index.aspx>

Where Does Tigard's Water Come From? - continued from page 2

How is your drinking water treated?

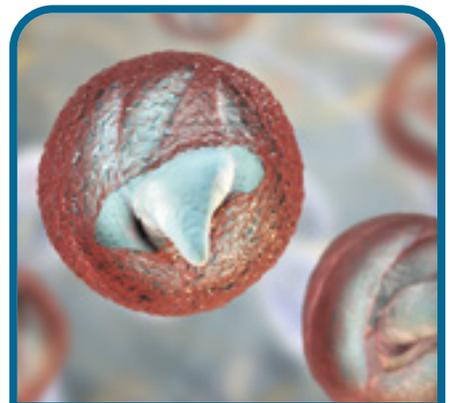
The water that goes through the Lake Oswego-Tigard Treatment Plant is a conventional treatment process which uses ballasted flocculation, intermediate ozone, and biological filtration:

- **Ballasted flocculation** uses micro-sand and a coagulant to settle dirt, sediment and contaminants out of the water.
- **Ozone** is then added to remove unpleasant taste and odor compounds and to provide advanced treatment.
- **Biological Filtration** through a deep bed of granular activated carbon and silica sand removes any remaining tiny microbes and contaminants, such as cryptosporidium. Beneficial biological activity removes organic molecules that can produce disinfection byproducts.
- **Filtered water** is then disinfected using a small amount of chlorine and the pH is adjusted to prevent corrosion of household plumbing.



Watch: The Path to Pure Water

A look inside the heart of the Lake Oswego-Tigard Water treatment process. <http://lotigardwater.org/?e=866>



CRYPTOSPORIDIUM

Cryptosporidium is a micro-organism (protozoan) naturally present in surface water supplies throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or pollution from human or animal wastes.

Since wildlife inhabit the Clackamas River Watersheds, managing agencies regularly monitor for Cryptosporidium. Occasionally, this monitoring detects low levels of Cryptosporidium.

New national standards further reduce the risks of illness from Cryptosporidium. Symptoms of infection include nausea, abdominal cramps and diarrhea.

Most healthy individuals are able to overcome the disease within a few weeks. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life threatening illnesses. Immunocompromised individuals are encouraged to consult their doctor regarding appropriate precautions to avoid infection.

Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water.

2019 Water Quality Analysis Results

Federal standards regulate contaminants to protect drinking water quality.

Tigard and its water supply partners test for more than 200 regulated and unregulated contaminants.

Contaminant	MCL	MCLG	TWSA Results LOW ← Range → HIGH		Violation? Yes / No	Major Sources of Drinking Water
MICROBIOLOGICAL CONTAMINANTS						
Fecal coliform and E.coli Bacteria	A routine sample and a repeat sample are total coliform positive and one is also E. coli positive	0	0 samples out of 900 had detectable E. coli or fecal coliform bacteria		No	Human and animal fecal waste
Total coliform bacteria	Must not detect coliform bacteria in more than 5% of samples per month	0	0 samples out of 900 had detectable total coliform bacteria		No	Naturally present in the environment
Turbidity (NTU)	Cannot exceed 1 in a single sample or 0.3 in 95% of samples	NA	Highest single measurement: 0.13		No	Erosion of natural deposits
INORGANICS						
Nitrate - Nitrogen (ppm)	10	10	ND	2.05	No	Found in natural aquifer deposits; animal waste
DISINFECTION RESIDUAL AND BYPRODUCTS						
Total Chlorine Residual Running Annual Average (ppm)	4	4	0.77	.97	No	Additive used to disinfect water
Total Chlorine Residual at Any One Site (ppm)	NA	NA	0.32	1.26	No	
Bromate (ppb)	10	0	ND	1.20	No	Byproduct of drinking water treatment with Ozone
DISINFECTION BYPRODUCTS - HALOACETIC ACIDS						
Haloacetic Acids Running Annual Average (ppm)	0.060	NA	0.0051	0.0066	No	Byproduct of drinking water disinfection
Haloacetic Acids at Any One Site (ppm)	Not Applicable	NA	0.0039	0.0098	No	
DISINFECTION BYPRODUCTS - TOTAL TRIHALOMETHANES						
Total Trihalomethanes Running Annual Average (ppm)	0.080	NA	0.0083	0.0161	No	Byproduct of drinking water disinfection
Total Trihalomethanes at Any One Site (ppb)	NA	NA	0.0065	0.0250	No	
UNREGULATED AND SECONDARY (REGULATIONS PROVIDE ADVISORY LIMITS ONLY)						
Contaminant	90th Percentile	Number of Sites Exceeding the Action Level	MCLG	Lead and Copper Rule Exceedance	Action Level Reached	Typical Source
Copper (ppm)	0.0	0% of samples (0 out of 66) exceeded the copper action level of 1.3 ppm	1.3	More than 10% of the homes tested have levels above 1.3 ppm	No	Corrosion of household and commercial plumbing
Lead (ppb)	3.7	3% of samples (2 out of 66) exceeded the lead action level of 15 ppb	0.0	More than 10% of the homes tested have levels above 15 ppb	No	

AL: action level, MCL: maximum contaminant level, MCLG: maximum contaminant level goal, MRDL: maximum residual disinfectant level, MRDLG: maximum residual disinfectant level goal, MDL: method detection limit, ND: non-detected, NA: not applicable, NTUs: nephelometric turbidity units, ppm: parts per million, mg/L: milligrams per liter, ppb: parts per billion, µg/L: micrograms per liter, pCi/l: picocuries per liter. For complete definitions, see page 6.





Tigard Water Master Plan Getting Underway

The Lake Oswego-Tigard Water Partnership is celebrating its 4th birthday! As part of this milestone, Tigard has been updating its Water Master Plan. The Master Plan assesses the current state of the utility, and helps us plan for the future. As part of the Master Plan we are forecasting 20 years of capital projects, their rate impacts, and addressing future resiliency and water supply challenges.

The Water Master Plan also presents an opportunity to reflect on the successes of the last four years. Since the Lake Oswego-Tigard Water Treatment Plant began operating, water quality and quantity in both cities has improved.

Beyond delivery of a reliable supply of high-quality water, the partnership between Tigard and Lake Oswego is an example of smart financial stewardship. By joining resources and jointly operating a state-of-the-art water plant, both cities have ensured resiliency and safe water for future generations, while reducing the unnecessary costs for two cities to operate two separate plants.

Two aims of the Master Plan are to protect the community investment in the joint plant and to add resiliency for the future.

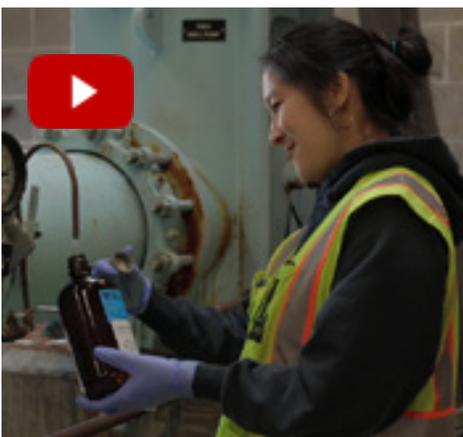
The plan process will investigate Tigard's growing needs and plan projects to prepare for that future.

To preserve the \$160 million investment in the joint water plant, ongoing maintenance and improvements are critical. Tigard's aquifer storage and recovery project will also continue to play a role in providing additional water supply during the peak summer months.

Additionally, the Master Plan introduces several new capital projects. An increase in local water main breaks in the last 10 years will be addressed through a new program to proactively replace water mains and prevent breaks before they can occur. Construction will also begin on a new reservoir in Cach Nature Park to add storage and help maintain adequate flow for fire response.

Together, these projects will help provide a reliable water supply for the future.

To learn more about Tigard's Water Master Plan, or see a few of these projects up close please visit our website at www.tigard-or.gov/water. You will find videos, updates on the Master Plan, and much more.



What is the Water Master Plan?



Where are we Today?



Looking to the Future

Lead in the Drinking Water... *Are You at Risk?*



If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

The City of Tigard 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 (800-426-4791) or www.epa.gov/safewater/lead.

Definitions

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

Maximum Contaminant Level (MCL): 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.

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Residual Disinfectant 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 of health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Nephelometric Turbidity Units (NTUs): Turbidity is a measure of how clear the water looks. Turbidity can interfere with disinfection and provide a medium for microbial growth.

Parts per Million (ppm) or Milligrams per Liter (mg/L): A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one million parts by weight of the water sample. One part per million corresponds to one penny in \$10,000 or approximately one minute in two years. One part per million is equal to 1,000 parts per billion.

Parts per Billion (ppb) or Micrograms per Liter (µg/L): A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one billion parts by weight of the water sample. One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2,000 years.

Non-detected (ND): Not detected at or above the MDL (Method Detection Limit/Level).

Not Applicable (NA): Not applicable for the specified contaminant.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

SPECIAL NOTICE FOR IMMUNO-COMPROMISED PERSONS

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. Environmental Protection Agency and 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).

What the EPA Says about Drinking Water Contaminants



In order to ensure that tap water is safe to drink, the US Environmental Protection Agency (EPA) sets regulatory limits on the amounts of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) sets limits on contaminants in bottled water, which must provide the same protection for public health.

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.

Because of this natural part of water's cycle, drinking water, including bottled water, may contain small amounts of some contaminants. However, the presence of contaminants does not necessarily indicate that the water poses a health risk.

Contaminants that may be present in source water include:

- ▶ **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems.
- ▶ **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges or farming.
- ▶ **Pesticides and herbicides**, which may come from a variety of sources such as farming, urban stormwater runoff and home or business use.
- ▶ **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and may come from gas stations, urban stormwater runoff and septic systems.
- ▶ **Radioactive contaminants**, which can occur naturally.

More information about contaminants and potential health effects is available from the EPA's Safe Drinking Water Hotline (800-426-4791).

TWSA SOURCE WATER ASSESSMENT

In 2005, the Oregon Health Authority and the Department of Environmental Quality conducted a source water assessment for the aquifer storage and recovery wells and the native groundwater well serving the Tigard Water Service Area (TWSA). The purpose of the assessment was to identify potential sources of direct and indirect contamination in areas surrounding these wells. The assessment identified 50 potential contaminant sources (natural and manmade) that could affect the water quality if managed improperly.

To view the assessment, contact Environmental Program Coordinator Jennifer Joe at 503-718-2599 or jennifer@tigard-or.gov.

MEET OUR STAFF:



Shasta Billings-Beck

What is your job title and what do you do for the city?

I am a Senior Project Engineer, and I oversee all the capital improvement projects for the city's water distribution system. This includes pump stations, reservoirs, wells, water lines, etc.

How long have you worked for the City of Tigard?

I have been with the City of Tigard for almost a year and a half. Time flies when you're having fun!

What do you like most about your work?

One thing I really enjoy about my work is that no two days are the same. The water distribution system is a complex web across the City, and I'm still learning new intricacies about it all the time.

What is something that people might not know about the work you do?

I am getting ready to kick off an amazing project to build a new reservoir on the western slopes of Bull Mountain. It's been about 10 years since the city last built a new reservoir, and established city's don't usually build reservoirs very often, so I'm very excited for the opportunity to be a part of this rare project for the city.

Any interesting trivia or tidbits?

I'm an avid waterskiier, but also have an irrational fear of water where I can't see the bottom. Gotta conquer those fears though for the joy of doing what you love!



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 PUBLIC WORKS DEPARTMENT
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Have a question about this report?

Contact Tigard Environmental Program Coordinator Jennifer Joe at 503-718-2599 or jennifer@tigard-or.gov.

¿Habla Español?

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

This report was printed on recycled paper with environmentally friendly inks. Please remember to recycle.

REQUEST AN EXTENSION:

Backflow Testing

Tigard Water Service Area customers can request an extension to September 1, 2020 by contacting:

**Hung Nguyen,
 Cross Connection Specialist**

Email: hung@tigard-or.gov
 Phone: **503-718-2603**

The city cannot waive backflow testing requirements, as they protect public health. For more information visit the Oregon Health Authority Drinking Water Division.



Questions?

TIGARD HAS THE ANSWERS!

Your Water Bill?

Utility Billing..... 503-718-2460

Water Quality?

Jennifer Joe.....503-718-2599
 jennifer@tigard-or.gov

Water Conservation?

Kevin McCaleb 503-718-2591

Backflow Prevention?

Hung Nguyen.....503-718-2603
 hung@tigard-or.gov

Water Emergencies?

Public Works 503-718-2591

After-hours Water Emergencies?

On-call Service503-639-1554

General Inquiries?

Public Works 503-718-2591

FREQUENTLY ASKED QUESTIONS



Is fluoride added to our drinking water?

No. The Lake Oswego-Tigard Treatment Plant does not add fluoride to the water. Fluoride is a naturally occurring trace element in surface and groundwater. You may want to consult with your dentist about fluoride treatment to help prevent tooth decay, especially for young children.

Is our water soft or hard?

Our water is very soft. Most of the year the hardness ranges from 3-8 parts per million (ppm), or approximately ¼ to ½ a grain of hardness per gallon. During the summer, some customers receive a blend of groundwater from our aquifer storage and

recovery wells. The water from these wells has a hardness of approximately 80 ppm (about 5 grains per gallon), which is deemed moderately hard.

How can I get my water tested?

Contact Tigard Public Works at **503-718-2591** for information about a free lead-in-water testing kit. For more extensive testing, private laboratories can test your tap water for a fee. Not all labs are accredited to test for all contaminants. For information about accredited labs, call the Oregon Health Authority, Oregon Environmental Laboratory Accreditation Program at **503-693-4122**.