



2016 Drinking Water Report

Karen Place Water System
State ID #02860P, Thurston County



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About Your Water Quality

Washington Water Service Company (WWSC) is committed to being a leader in providing communities and customers with traditional and innovative utility services. WWSC is proud of its service record and is staffed with courteous and knowledgeable water professionals who are dedicated to meeting your needs. While we are proud of our past record, we continually strive to improve upon the quality of services we provide to you, our valued customer.

This 2016 Drinking Water Report is your annual update on the quality and safety of your drinking water. It includes the most recent water quality results through the monitoring period ending December 31, 2016, in accordance with state and federal regulations (not all testing is required every year). This report also provides access through references and telephone numbers to source water assessments, health effects information, and other water system topics. This allows you to make personal health-based decisions regarding your drinking water consumption and become more involved in decisions which may affect your health.

Most importantly, this report shows that your drinking water source meets all primary and secondary EPA and Department of Health standards.

We hope you find this information helpful.

Your Water System

SOURCE WATER PROTECTION INFORMATION.

Drinking water comes from groundwater (wells and springs) and surface water (rivers, lakes, streams). Protecting these drinking water sources is key to sustaining safe drinking water supplies for this and future generations.

What you can do to protect source water:

- Ensure that your septic system is properly maintained.
- Use chemical fertilizers and pesticides sparingly, if at all.
- Don't dump any hazardous waste on the ground. This includes: motor oil, pesticides, paint or paint cans, mothballs, flea collars, household cleaners, medicines, etc.

Check the SWAP information for your water system:

The Washington State Department of Health Office of Drinking Water has compiled Source Water Assessment Program (SWAP) data for all community water systems in Washington.

A source water assessment includes:

- A delineation (definition) of the source water protection area,
- An inventory of potential sources of contamination, and
- A susceptibility determination (how susceptible the source is to contamination).

An interactive map with data for your water system is available at:

fortress.wa.gov/doh/eh/dw/swap/maps

WHERE DOES MY WATER COME FROM?

Your water comes from a well (groundwater). The well is 56 feet deep and is located on Lot 16 on Elaine Court.

The system was optimized for corrosion control in 2004. The source water passes through calcium carbonate media in the on-site corrosion control treatment facility. This raises the pH and hardness of this slightly acidic groundwater, which reduces the water's corrosivity toward household plumbing and fixtures.



Possible Contaminants

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 the 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 (800) 426-4791.

Common sources of drinking water — both tap and bottled water — include rivers, lakes, streams, ponds, and reservoirs (surface water), and wells and springs (groundwater). As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material. Water can also 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, parasites, 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.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- **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.

In order to ensure that tap water is safe to drink, the Washington State Department of Health (DOH) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Washington State Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

VULNERABLE POPULATIONS

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, those 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 at (800) 426-4791.

Key Definitions

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

Lead and Copper 90th Percentile Value: Out of every 10 homes sampled, 9 were at or below this level. This must be less than or equal to the AL or additional steps must be taken.

Maximum Contaminant Level (MCL): The highest level of a contaminant 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 a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

N/A: Not applicable

NTU: Nephelometric turbidity unit (a measure of water clarity).

ppb: Parts per billion ($\mu\text{g/L}$, micrograms per liter)

ppm: Parts per million (mg/L , milligrams per liter)

Secondary Maximum Contaminant Level (SMCL): These standards are developed as guidelines to protect the aesthetic qualities of drinking water and are not health based.

$\mu\text{mhos/cm}$: Measure of specific conductance.



2016 Water Quality Table

Your water is tested for more than 100 contaminants for which state and federal standards have been set.

Tables 1 & 2 list all primary contaminants that were detected at or above the state reporting level (SRL), along with their respective MCLs. The SRL is the minimum reporting level required by DOH (each analytical parameter has an SRL). Primary MCLs (primary standards) protect public health by limiting the levels of these contaminants in drinking water.

TABLE 1: PRIMARY CONTAMINANTS

Inorganic Chemicals	Year Tested	Units	MCL	MCLG	Your Water	Violation?	Major Sources in Drinking Water
Nitrate	2016	ppm	10	10	2.2	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits

Table 3 lists secondary contaminants of interest to many consumers, as well as any unregulated contaminant detections. Secondary contaminants have no known health effects but can affect the aesthetic properties of water (taste, odor, and appearance). Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to help EPA determine their occurrence in drinking water and potential need for future regulation.

TABLE 2: LEAD AND COPPER

Samples are collected at customer kitchen or bathroom taps. Residences considered to be at highest risk for corrosion are selected for sampling (i.e., those with lead and copper in internal plumbing, based on specific EPA tiering criteria and available home construction details from county web sites). The number of homes sampled is based on population served by the water system. This testing is done every three years.

Primary Contaminants	Year Tested	Units	AL	90 th Percentile	Samples > AL	Violation?	Major Sources in Drinking Water
Copper	2015	ppm	1.3	0.13	0 of 5	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead	2015	ppb	15	7	0 of 5	No	Corrosion of household plumbing systems; erosion of natural deposits

2016 Water Quality Table

(Continued)

TABLE 3: SECONDARY AND UNREGULATED CONTAMINANTS

Secondary Contaminants	Year Tested	Units	SMCL	Your Water	Violation?	Major Sources in Drinking Water
Iron	2016	ppm	0.30	0.13	No	Leaching from natural deposits; industrial wastes
Manganese	2016	ppm	0.05	< 0.001	No	Leaching from natural deposits
Chloride	2016	ppm	250	6.9	No	Runoff/leaching from natural deposits; seawater influence
Sodium ¹	2016	ppm	n/a	6.2	No	Erosion of natural deposits; seawater influence
Hardness ²	2016	ppm	n/a	82	No	Erosion of natural deposits
Conductivity	2016	µmhos/cm	700	225	No	Substances that form natural deposits; seawater influence
Turbidity ³	2016	NTU	n/a	0.1	No	Soil runoff
Color	2016	color units	15	5.0	No	Naturally occurring organic materials
Unregulated Contaminants	Year Tested	Units	SMCL	Your Water	Violation?	Major Sources in Drinking Water
Lead ⁴	2016	ppb	n/a	< 1	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper ⁴	2016	ppm	n/a	< 0.02	No	Corrosion of household plumbing systems; erosion of natural deposits

¹The EPA recommends 20 ppm sodium as a level of concern for consumers who must restrict their dietary intake.

²When reading the hardness value, 0–75 ppm is considered “soft” water, 75–150 ppm is “moderately hard,” 150–300 ppm is “hard,” and > 300 ppm is “very hard”. To convert to grains per gallon of hardness, divide total hardness by 17.1. Calcium carbonate is dissolved into the source water during corrosion control treatment, increasing the pH and hardness of the water, thereby reducing the water’s corrosivity toward household copper plumbing. Hardness of the untreated water is 40–45 ppm.

³There is currently no trigger or MCL value for groundwater turbidity.

⁴Lead and copper are regulated at customer taps (see Table 2 for those results), not at the source, which is what these results represent. This is because lead and copper in drinking water do not typically come from the water source. They come from the plumbing that serves, or is inside, the customer’s home, from corrosion of lead and copper-containing plumbing or fixtures, or the lead solder that connects copper pipes.

About Lead

As the water quality crisis in Flint, Michigan, continues to be top of mind for many Americans, Washington Water wants to assure you about the quality of your water.

Washington Water is compliant with health and safety codes mandating use of lead-free materials in water system replacements, repairs, and new installations. We have no known lead service lines in our systems. We test and treat (if necessary) water sources to ensure that the water delivered to customer meters meets water quality standards and is not corrosive toward plumbing materials.

The water we deliver to your home meets lead standards, but what about your home's plumbing? In Washington state, lead in drinking water comes primarily from materials and components used for in-home plumbing (for example, lead solder used to join copper plumbing, and brass and other lead-containing fixtures). Therefore, the Lead and Copper Rule is a critical part of our water quality monitoring program, and we follow it completely. This rule requires us to test water *inside* a representative number of homes that have plumbing most likely to contain lead and/or lead solder. This test, along with other water quality testing, tells us if the water is corrosive enough to cause lead from home plumbing to leach into the water. If the Action Level (the concentration of a contaminant which, when exceeded, triggers action which a water system must follow before it becomes a health concern) is exceeded, either at a customer's home or systemwide, we work with the customer to investigate the issue. If the problem is systemwide, we will implement

corrosion control treatment at the source before the lead levels create a health issue.

As the crisis in Flint made clear, if present, elevated levels of lead can cause serious health problems, especially for pregnant women and children. If your home's plumbing contains lead piping or pipe fittings, lead solder, or brass fixtures that may contain lead, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested by a lab. 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 www.epa.gov/safewater/lead.

Results of our lead monitoring program, conducted in accordance with the Lead and Copper Rule, can be found in Water Quality Tables 2 and 3.

About Monitoring Waivers

(Reduced Monitoring)

ORGANIC CHEMICALS

Drinking water sources are sampled and tested a minimum of every six to nine years for an array of organic chemicals including volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs), such as herbicides and pesticides. VOCs are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems.

Sampling frequencies for these groups of organic chemicals can vary depending on the county in which your water system is located, whether the source has been granted a monitoring waiver, and whether there have been past detections of any of these organic contaminants.

Monitoring waivers are granted by the DOH and are based on a source's susceptibility rating (risk of contamination), water quality history, and information gathered from across the state.

If there were detections of organic contaminants obtained during the most recent round of compliance monitoring (2011–2016 for VOCs; 2008–2016 for SOCs), they are shown in the water quality data tables. If there are none reported in the tables, there were none detected.

RADIOACTIVE CONTAMINANTS

Drinking water sources are sampled and tested a minimum of every six years for radioactive contaminants (radium 228 and gross alpha). These contaminants can be naturally occurring or the result of oil and gas production and mining activities.

If there were any detections obtained during the most recent round of compliance monitoring (2011–2016), they are shown in the water quality data tables. If there are none reported in the tables, there were none detected.

Important Contact Information

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Thank you.

Thanks for taking the time to learn more about your water quality!

OUR WATER QUALITY COMMITMENT:

You Can Count on Washington Water Employees to...

- Provide you with the highest quality water possible
- Sample, test, and treat your water on a regular basis
- Work diligently to meet every water quality standard on every system, every day
- Maintain the water distribution system reliability
- Provide you with the highest level of customer service possible

