2017 Annual Drinking Water Quality Report
Washington State University Pullman Drinking Water System
(Public Water System #93200Q)

The U.S. Environmental Protection Agency (EPA) and the Washington Department of Health (WDOH) require that WSU Pullman's public drinking water system routinely provide an annual drinking water quality report to its consumers. This annual report explains where WSU Pullman's drinking water comes from, what it contains, and the sampling, testing, and treatment that is done to provide safe drinking water.

If future samples show that the drinking water is not safe to consume, EPA and WDOH requires that WSU notify consumers immediately.

Summary of the Report

EPA and WDOH require that public drinking water systems sample and analyze their water for:

- Microbial contaminants, such as bacteria (coliforms), which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic Chemical contaminants (IOCs), such as salts, minerals 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.
- Organic chemical contaminants, including Synthetic Organic Chemicals (SOCs), Volatile Organic Chemicals (VOCs), and Disinfection Byproducts, which can be by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, septic systems, and chlorine disinfection reacting with organic chemicals.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Radioactive contaminants (radionuclides), which can be naturally-occurring or be the result of oil and gas production and mining activities.

The frequency and number of drinking water samples and tests for contaminants varies each year depending on the source of drinking water (groundwater vs. surface water sources [WSU Pullman has groundwater sources]), vulnerability of the sources to contamination, the size of the system, the type of distribution system piping (metal, plastic, asbestos/concrete), and previous sample results.

WSU chlorinates its drinking water daily to prevent microbial contamination. The chlorine levels are monitored continuously and WSU takes at least 295 chlorine and microbial samples each year.

The WDOH reduced the monitoring requirements for WSU for Inorganic Chemicals (IOCs), Synthetic Organic Chemicals (SOCs), and Volatile Organic Chemicals (VOCs) because WSU's wells are at a low to moderate risk of contamination. The most recent SOC, VOC, Nitrate, and Disinfection Byproduct samples were obtained on 10-31-14, 9-6-16, 7-19-17, and 8-1-17 respectively. All contaminants listed above were Not Detected, and therefore not listed in the table below.

Sources of WSU's Drinking Water

The WSU water system is supplied by groundwater from the Palouse Basin Aquifer. Drinking water is pumped from four (4) groundwater sources (wells) on campus (well #4 [source S04], well #6 [source S06], well #7 [source S08], and well #8 [source S09]). The WSU water system is separate from the City of Pullman system except for four emergency interties. WDOH has Source Water Assessment

Program data on the WSU water system which includes the susceptibility rating of potential contamination for each well on campus. For more information contact the WDOH at (509) 329-2100.

The table below displays reportable contaminants in the most recent samples required by the WDOH and EPA, the range of detections, typical sources of contamination, units of measurement, whether there was a violation, with a key and footnotes explaining the test results.

An Explanation of the Drinking Water Quality Table

Please note the following definitions:
Action Level: 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 a 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 chlorine disinfectant allowed in the 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 chlorine 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.
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water. The WSU system uses chlorine as the TT intended to reduce the level of microbial contaminants in the drinking water.

Contaminant [1]	Date Sampled	Range of Detections [2]	Unit	MCL	MCLG	Typical Source of Contaminant	Violation
Contaminants with Primary MCLs							
Barium	6-22-16	74.4	ppb	2000	2000	Erosion of natural deposits	No
Copper	5-13-15 to 7-9-15	3.65 – 156 [3]	ppb	AL = 1300	0	Corrosion of household plumbing systems; Erosion of natural deposits	No
Lead	5-13-15 to 7-9-15	ND – 9.66 [3]	ppb	AL = 15	0	Corrosion of household plumbing systems; Erosion of natural deposits	No
Fluoride	6-22-16	520	ppb	4000	4000	Erosion of natural deposits	No
Sodium	6-22-16	24.3	ppm	NA	NA	Erosion of natural deposits	No [4]
Gross Alpha	6-23-15 6-30-15	<1± 0.799 to <1±1.91	pCi/l	15	–	Erosion of natural deposits	No
Radium 228	6-23-15 6-30-15	-0.0432 +/- 0.337 to 0.158 +/- 0.325	pCi/l	5	–	Erosion of natural deposits	No
Contaminants with Secondary MCLs [5]							
Iron	6-22-16	116	ppb	300	NA	Erosion of natural deposits	No
Manganese	6-22-16	39.6	ppb	50	NA	Erosion of natural deposits	No
Zinc	6-22-16	2.4	ppb	5000	NA	Erosion of natural deposits	No
Chlorine (Residual)	Daily	0 – 200	ppb	4000 MRDL	2000 MRDLG	Water additive to control microbes	No
Conductivity	6-22-16	378	umhos/ cm	700	NA	Erosion of natural deposits	No
Total Dissolved Solids	6-22-16	217	ppm	500	NA	Erosion of natural deposits	No

Key:

AL = Action Level, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
NA = Not Applicable
ND = Not Detected
pCi/l = picocuries per liter
ppb = parts per billion or micrograms per liter (ug/l)
ppm = parts per million or milligrams per liter (mg/l)
umhos/cm = micromhos per centimeter (a measure of conductivity)

Footnotes:

[1] Only the most recent samples with contaminants found in the water are listed.

[2] The lowest to highest detected contaminant levels from any well or distribution sample are reported.

[3] Thirty (30) samples were analyzed with none above the AL for lead (15 ppb) or copper (1300 ppb). The 90th percentile sample (out of every 10 samples, 9 were at or below this level) was 4.97 ppb for lead and 131 ppb for copper. This does not trigger treatment, more sampling or other sampling requirements. 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. WSU 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 thirty 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. 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 at http://www.epa.gov/safewater/lead.

[4] The EPA has established a recommended level of 20 ppm for sodium as a level of concern for those consumers that may have daily sodium intake restrictions in their diets.

[5] Secondary MCLs are standards developed to protect the aesthetic qualities of drinking water and are not health based. Because they are not health based, they are not considered violations.

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted. WSU was not required to sample for unregulated contaminants in 2017. In addition, WSU drinking water comes from groundwater, and is not required to sample for *Cryptosporidium* since it is usually found only in surface waters.

Additional Health Information

To ensure that tap water is safe to drink, the WDOH and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Dept. of Agriculture 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 potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800) 426-4791.

The sources of drinking water (both tap 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. 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 and bacteria (coliforms), which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- Inorganic contaminants, such as salts, minerals 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 SOCs and VOCs, which are by-products 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 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 / Center for Disease Control (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.

WSU is active in protecting the health and safety of students, faculty, staff and visitors of the University, and we will notify you immediately if the drinking water is not safe to consume.

For More Information

The WSU Water Board is responsible for ensuring that the water system conforms to all applicable regulations. If you are interested in attending a Water Board meeting, contact Environmental Health and Safety (EH&S) 335-3041 for the next meeting time and date.

This report was prepared by EH&S, and is available at the WSU web sites below:

https://ehs.wsu.edu/PH/DrinkingWaterQuality.html

https://sustainability.wsu.edu/operations/water-quality/drinking-water/

For more information about the WSU water system, please contact Gene Patterson at 509-335-3041, via email at gpatters@wsu.edu or the WSU Environmental Health and Safety web page at http://ehs.wsu.edu/. Additional information is available from EPA at http://water.epa.gov/drink/.