2015 ANNUAL DRINKING WATER QUALITY REPORT

Drinking Water Quality Data from 2014

CITY OF Salem
AT YOUR SERVICE
PUBLIC WORKS DEPARTMENT

Last year, Salem met or exceeded more than **120 drinking water quality standards.**

Please Share!

If you are a manager or owner of a business or multifamily dwelling, please share this report with your employees or residents. If you would like additional copies, please call the Water Quality Hotline at **503-588-6323**.

¿Español?

Este documento contiene informacion importante sobre su agua potable. Si usted desea recibir una copia de este documento en español, por favor, llame al **503-588-6323** y pida una copia del reporte de calidad de agua o visite nuestra pagina electronica **www.cityofsalem.net**.

This document contains information about your potable water. If you would like to receive a copy of this document in Spanish, please call **503-588-6323** and ask for a water quality report or visit our website at **www.cityofsalem.net**.

Important Information Regarding Drinking Water

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 U.S. Environmental Protection Agency (EPA) Safe Drinking Water Hotline at **1-800-426-4791**.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 and Centers for Disease Control 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 **1-800-426-4791**.

What the EPA Wants You to Know About Contaminants in Source Waters

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 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 by-products of industrial processes and petroleum production, and which 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 tap water is safe to drink, the EPA establishes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations set limits for contaminants in bottled water that must provide the same protection of public health.

Salem's Sources for Drinking Water

For more than 75 years, the City of Salem has been getting its drinking water supply from the North Santiam River, which flows from the foothills of the Cascade Range and provides high quality river water suitable for slow sand filtration at the Geren Island Water Treatment Facility. Following slow sand filtration, the water is further treated with sodium hypochlorite (liquid chlorine) for disinfection, fluorosilicic acid (liquid fluoride) for fluoridation, and sodium carbonate (soda ash) to minimize the corrosion of lead and copper from household plumbing.

Additionally, the City utilizes an Aquifer Storage and Recovery (ASR) system, located in south Salem. In the winter months, during peak river flows and low customer water demand, treated drinking water is injected into the ASR system. The water is stored in a naturally existing aquifer located 350 feet below Woodmansee Park. During the summer months, when low river flows and high customer water demand exist, water is recovered from the ASR system. The recovered water is treated with calcium hypochlorite (chlorine) for disinfection and conveyed to the distribution system serving south Salem water customers.

City Remains on Reduced Monitoring for Lead and Copper Sampling

The City of Salem will remain on reduced lead and copper monitoring following sampling that was conducted in 2013. The City of Salem collected samples from 91 of the 146 Tier 1 homes identified in a 1990s assessment, and only one home exceeded the action level for lead. The City will undertake another round of sampling during the summer of 2016. At that time, the City will send each Tier 1 home a sample kit so they have the opportunity to participate in the sampling program.

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 Salem 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. Information on lead in drinking water, testing methods, and steps you can take to minimize your exposure is available from the Safe Drinking Water Hotline at **1-800-426-4791** or at **www.epa.gov/safewater/lead**.

Free Lead Testing for Salem Water Customers

The City of Salem offers free lead testing to its water customers. If you are concerned about the levels of lead in your home and would like to request a free test, please call the Water Quality Hotline at **503-588-6323**.

Understanding Salem's Source Water Assessment

The City of Salem's Source Water Assessment, completed in 2003 with assistance from the Oregon Department of Environmental Quality, provides an inventory of potential contaminant sources that could pose a risk to water quality of the North Santiam River. The assessment, as required by the Federal Safe Drinking Water Act, also identifies sensitive areas where potential contaminant sources may have a greater potential to impact the water supply.

Results of the assessment reveal that potential contaminant sources include sediments/ turbidity, microbiological agents, and nutrients. Potential sources of these contaminants include highways, leaking septic systems, grazing animals, forest practices, above-ground and below-ground storage tanks, wood processing and milling, junk yards, and auto and mechanical shops. The City continues to monitor activities within the North Santiam River Watershed that may impact its drinking water source.

Salem's Source Water Assessment is available on the City of Salem website at **www.cityofsalem.net**. The report can be found under **City Departments > Public Works > Operations > Water Services**. The report is also available by calling the Water Quality Hotline at **503-588-6323** or via email at **water@cityofsalem.net**.

What Is in Salem's Drinking Water?

TEST	DATE TESTED	UNIT	MCLG (MRDLG)	MCL (MRDL)	DETECTED LEVEL	RANGE LOWEST	RANGE HIGHEST	VIOLATION	MAJOR SOURCES
2014 Water Quality Data from Geren Island Treatment Facility, Distribution System, and Salem Water Customers									
Inorganic									
Fluoride	2014	ppm	4	4	Average: 0.66	<0.50	0.76	NO	Erosion of natural deposits; water additive—promotes strong teeth
Nitrate*	2014	ppm	10	10	Average: 0.08	One sample collected		NO	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Nitrate-Nitrite*	2014	ppm	10	10	Average: 0.08	One sample collected		NO	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Barium	2014	ppm	2	2	0.0017	One sample collected		NO	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	2013	ppm	1.3	AL=1.3	90th Percentile: 0.372 Homes exceeding: 0	<0.03	0.676	NO	Corrosion of household plumbing systems
Lead	2013	ppb	0	AL =15	90th Percentile: 4.4 Homes exceeding: 1	<1.0	29	NO	Corrosion of household plumbing systems
Microbiological									
Turbidity	2014	NTU	N/A	TT	100% of samples meet turbidity standards Average: 0.10	0.04	0.82	NO	Erosion and soil runoff
Total coliform	2014	No units	0	Presence of coliform bacteria in >5% of monthly samples	4 coliform bacteria were detected in a total of 1,573 samples collected	None	1.5%	NO	Naturally present in the environment
Fecal coliform or *E. coli* bacteria	2014	No units	0	Presence of coliform bacteria in >5% of monthly samples	Fecal coliform or *E. coli* bacteria were not detected	None	None	NO	Human or animal fecal waste
Disinfection By-Products, By-Product Precursors, and Disinfectant Residual									
Haloacetic acids	2014	ppb	0	60	Locational Running Annual Average: 38	13	65	NO	By-product of drinking water disinfection
Total Trihalomethanes	2014	ppb	0	80	Locational Running Annual Average: 39	22	56	NO	By-product of drinking water disinfection
Total Organic Carbon	2014	ppm	N/A	TT	Raw Water Annual Average: 0.95	0.80	1.1	NO	Naturally present in the environment
Chlorine Residual	2014	ppm	4.0	4.0	Entry Point Average: 1.23	0.66	1.55	NO	Remaining chlorine from disinfection process
Radioactive Constituents									
Combined Radium*	2011	pCi/L	0	5	0.26	One sample collected		NO	Erosion of natural deposits
Unregulated Constituents									
Sodium	2014	ppm	N/A	20†	6	One sample collected		NO	Erosion of natural deposits
2014 Water Quality Data from Aquifer Storage and Recovery Wells									
Inorganic									
Barium	2014	ppm	2	2	0.0027	One sample collected		NO	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	2014	ppm	4	4	0.69	One sample collected		NO	Erosion of natural deposits; water additive—promotes strong teeth
Chromium*	2010	ppb	100	100	1.0	One sample collected		NO	From steel and pulp mills; erosion of natural deposits
Lead*	2010	ppb	0	15	0.8	One sample collected		NO	Corrosion of household plumbing systems; erosion of natural deposits
Organic									
Hexachlorocyclo-pentadiene*	2010	ppb	50	50	0.08	ND	0.08	NO	Discharge from chemical factories
Di(2-ethylhexyl)phthalate*	2009	ppb	0	6	0.7	One sample collected		NO	Discharge from rubber and chemical factories
Radioactive Constituents									
Combined Radium*	2011	pCi/L	0	5	1.01	One sample collected		NO	Erosion of natural deposits
Disinfection By-Products, By-Product Precursors, and Disinfectant Residual									
Haloacetic acids	2014	ppb	0	60	39	One sample collected		NO	By-product of drinking water disinfection
Total Trihalomethanes	2014	ppb	0	80	29	One sample collected		NO	By-product of drinking water disinfection
Total Organic Carbon	2014	ppm	N/A	TT	0.67	One sample collected		NO	Naturally present in the environment
Unregulated Constituents									
Sodium	2014	ppm	N/A	20†	6.53	One sample collected		NO	Erosion of natural deposits

* The City of Salem is required to report any detected contaminant within the last five years.
† EPA advisory level only.

Where Does Salem's Water Come From?

Salem's Water System

Serving a population of 189,000 daily from the North Santiam River Watershed

Definitions

- ***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 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.
- ***Action Level (AL):*** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.
- ***Treatment Technique (TT):*** A required process intended to reduce the level of a contaminant in drinking water.
- ***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 to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Units of Measurement

- ***Parts per Million (ppm):*** One part per million is equal to one cup of food coloring in an Olympic size swimming pool (130,000 gallons)
- ***Parts per Billion (ppb):*** One part per billion is equal to one drop of food coloring in an Olympic size swimming pool (130,000 gallons)
- ***Nephelometric Turbidity Unit (NTU):*** The standard unit of measurement used in water analysis to measure turbidity in water samples.
- ***Picocuries per Liter (pCi/L):*** One part per billion of a curie per liter of water, used to measure radiation at very low levels.

Salem Families Benefit From Low-Income Assistance Program

The Low-Income Utility Assistance Program, sponsored by the City of Salem, is dedicated to helping individuals and families facing financial difficulties in paying their water, wastewater, and stormwater bills. The program is possible due to generous utility customers making voluntary tax-deductible donations used exclusively for low-income assistance.

In 2014, a total of **$10,864.54** was distributed to **135** families and individuals who would have otherwise faced possible water service disruption. Currently the donation amounts received are not enough to keep up with the low-income requests for distribution. If you would like to donate to the Low-Income Utility Assistance Program or if you are in need of low-income assistance for your utility bill, please visit our website at **www.cityofsalem.net** or contact the Customer Services Call Center at **503-588-6099** for more information.

9.66
billion gallons
Water produced in 2014
by the City of Salem

Other Results

Turbidity is a measure of water's clarity. High turbidity (muddy water) results from suspended soil and organic matter in water. This can increase the risk of contamination by interfering with the drinking water treatment process. All of the City's turbidity samples were below required levels.

Radon is a naturally-occurring radioactive gas found throughout the U.S., more often in groundwater than surface water. Radon levels taken from Salem's Aquifer Storage and Recovery (ASR) wells are consistent with levels typically found in Salem area groundwater.

Cryptosporidium is a harmful microbial pathogen found in surface water throughout the U.S. Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Cryptosporidium must be ingested to cause disease and may be spread through means other than drinking water. Monitoring in 2014 did not detect Cryptosporidium in untreated North Santiam River source water.

Ways to Get Involved!

Water-Wastewater Task Force

The Water-Wastewater Task Force, a citizen advisory committee, advises Salem Public Works Department and City Council. For more information and meeting dates, call **503-588-6211**.

Salem City Council

Salem City Council is the policy-making body for the water system and meets on the second and fourth Mondays of each month at 6:30 p.m. The meetings are open to the public and are held in the **City Council Chambers, Room 240, Vern Miller Civic Center, 555 Liberty Street SE, Salem, Oregon**. Call **503-588-6091** or visit **www.cityofsalem.net** for more information.

North Santiam Watershed Council

North Santiam Watershed Council's mission is to promote and sustain the health of the North Santiam Watershed. The meetings are open to the public and are held September through June at **284 E Water Street, Stayton, Oregon** on the second Thursday of each month at 6 p.m. Call **503-930-8202** for more information.

City Completes Construction of New Reservoir

The Mill Creek Reservoir project allowed for the continued development of the Mill Creek Corporate Center and increased the amount of water available for fire fighting activities. The 2.2 million gallon reservoir project cost roughly $5.74 million and was completed this past summer. The Mill Creek Reservoir is the 19th reservoir in the City's water system, which can now collectively store 137 million gallons of water. The City's largest reservoir is the Franzen Reservoir (storage of 92 million gallons) located near Turner.

Water Conservation

Conservation Starts At Home

Each water customer can help by conserving water at their home or business. Fix leaky toilets and faucets—better yet, consider installing new, water efficient faucets and appliances. Landscape with plants, shrubs, and trees that are suitable for our climate and don't require excess water during the summer months when water demand is at its highest.

To learn more about the ideas listed above or water conservation in general, visit the EPA *Water Sense* website at **www.epa.gov/WaterSense**.

One Inch Per Week

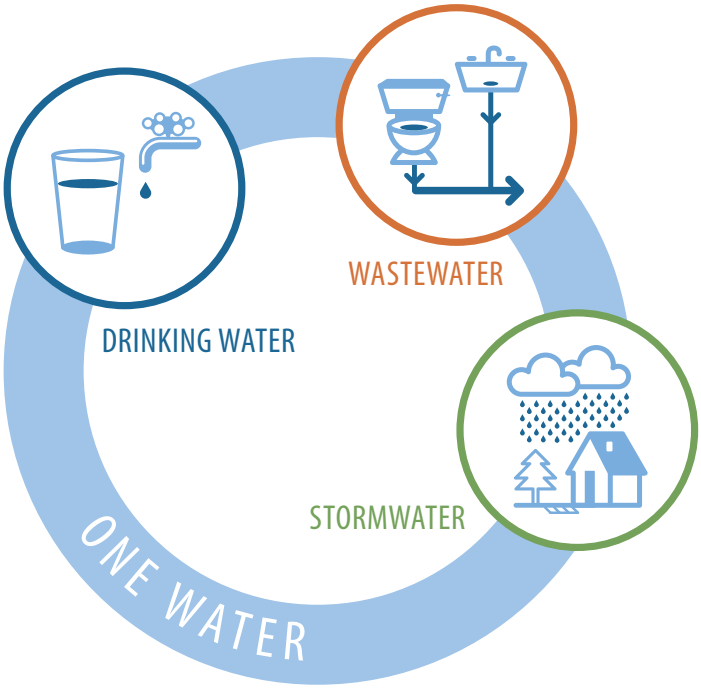
Your lawn only needs approximately one inch of water per week to stay healthy and green. Do you know how much water you apply every week? Request a free *One Inch Per Week* lawn watering gauge to find out. Call the Water Quality Hotline at **503-588-6323** or email **water@cityofsalem.net**.

City Offers Free Conservation Kits to Water Customers

Retrofitting existing fixtures can help reduce the amount of water you use every day and help save money on your utility bill. The City offers free indoor and outdoor water conservation kits to its customers. To request a free water conservation kit, please call the Water Quality Hotline at **503-588-6323** or email **water@cityofsalem.net**.

The City of Salem provides services for three types of water: **drinking water**, **wastewater**, and **stormwater**.

These all become one water in local rivers, so preventing water pollution is important for our health, economy, and environment.



45.3
million gallons
Salem peak daily water use in 2014

Want To Learn More?

US EPA
Safe Drinking Water Hotline
1-800-426-4791
www.epa.gov

Oregon Health Authority
Drinking Water Program
971-673-0405
http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater
(Salem's ID# 00731)

City of Salem
Public Works Department
Water Quality Hotline
503-588-6323
water@cityofsalem.net

Water Conservation Hotline
503-588-6323
water@cityofsalem.net

Water Outreach and Education Program
To arrange a classroom presentation, field trip, or community service project, call 503-588-6211

City of Salem Website
www.cityofsalem.net

CITY OF Salem
AT YOUR SERVICE
PUBLIC WORKS DEPARTMENT
1410 20TH STREET SE BLDG 2
SALEM OR 97302-1200

THE FEDERAL SAFE DRINKING WATER ACT requires this annual water quality report be mailed to every customer to provide information regarding the quality of the community's drinking water. Each copy of this report costs $0.29 to print and mail. If you have any questions or comments, please email **water@cityofsalem.net** or call the Water Quality Hotline at **503-588-6323**.

This report is printed on recycled materials.

It is the City of Salem's policy to assure that no person shall be discriminated against on the grounds of race, religion, color, sex, marital status, familial status, national origin, age, mental or physical disability, sexual orientation, gender identity, and source of income, as provided by *Salem Revised Code* Chapter 97. The City of Salem also fully complies with Title VI of the Civil Rights Act of 1964, and Americans with Disabilities Act of 1990, and related statutes and regulations, in all programs and activities. Special accommodations are available, upon request, for persons with disabilities or those needing sign language interpretations, or languages other than English. To request accommodations or services, please call 503-588-6211.

PWS – OR4100731

To Our Valued Customers,

Please take a moment to read the City of Salem's **2015 Annual Water Quality Report**. It contains important information about your drinking water, including where it comes from, how it is treated, and what, if any, contaminants it may contain. The Environmental Protection Agency (EPA) requires the City of Salem to produce and deliver this report to our customers to ensure that you are informed about the quality of the water delivered to your home or business every day.

The City of Salem is dedicated to providing safe, reliable drinking water to its customers. I am pleased to announce that in 2014, City of Salem drinking water met or surpassed every public health requirement—more than 120 drinking water quality standards—set by the Oregon Health Authority and the EPA.

As summer arrives and water demand increases, the City of Salem would like to remind you to use your drinking water efficiently. Summer water uses, including lawn watering, can bring average water demand to over 40 million gallons per day, which is nearly double the average daily demand during the winter months. It may be particularly important to conserve water this summer due to record low snowpack levels experienced last winter and lower river flows predicted for the North Santiam Basin. More information about ways you can conserve water at your home or business can be found inside this report.

As always, the City of Salem strives to deliver high-quality drinking water to your tap. For more information about Salem's drinking water, please visit **www.cityofsalem.net**

Lacey Goeres-Priest
Water Quality Supervisor
City of Salem Public Works Department
503-361-2224