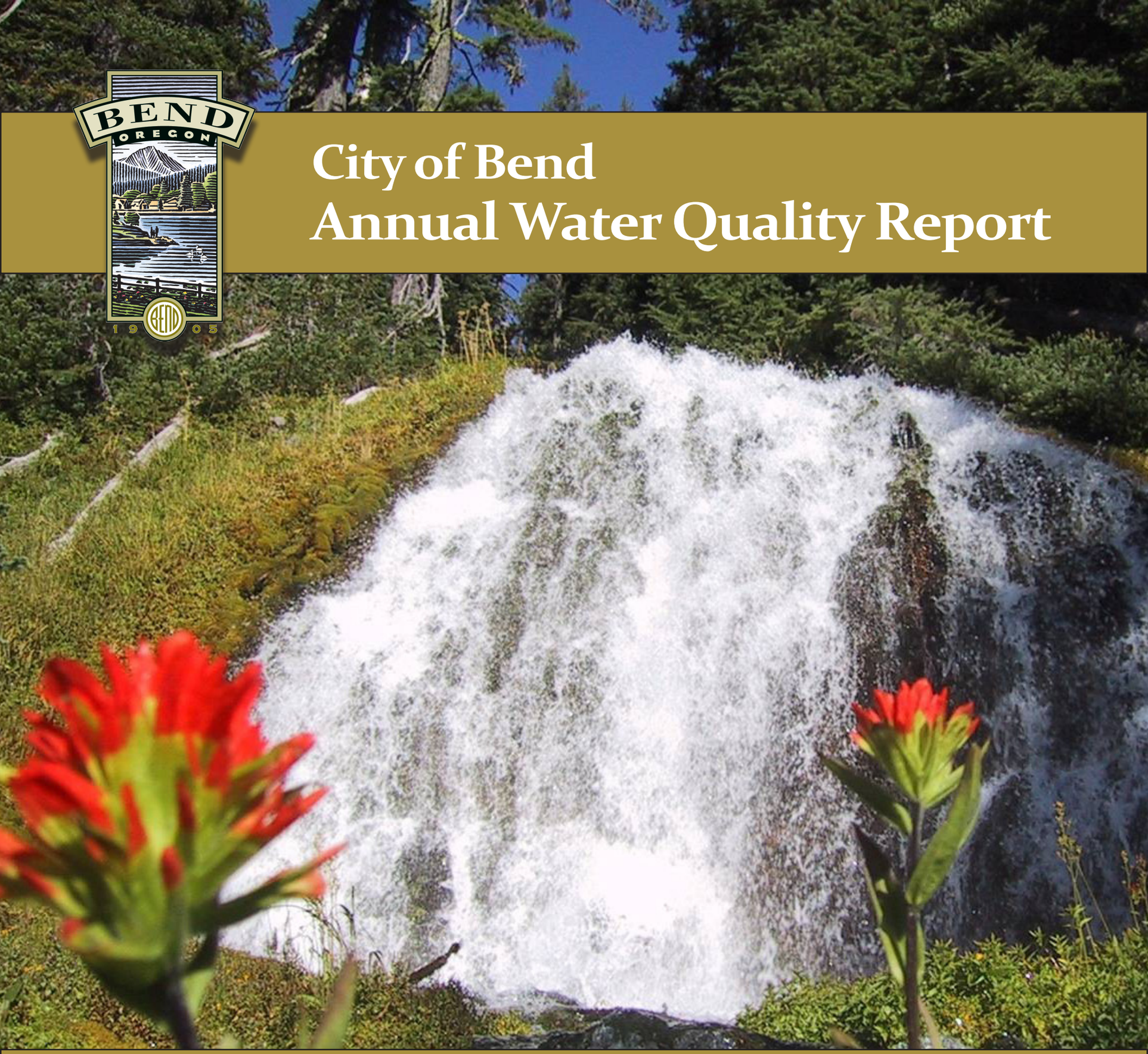

City of Bend
Annual Water Quality Report

Your Water in 2012

WHAT THE EPA SAYS ABOUT DRINKING WATER CONTAMINATES

To ensure that tap water is safe to drink, EPA prescribes regulations that 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.

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's Safe Drinking Water Hotline (1-800-426-4791)**.

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, agriculture livestock operations and wildlife.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff and residential uses.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming.
- Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants which can be naturally occurring.

Public Involvement Opportunity

The City of Bend Public Works Department invites all interested citizens to join them at City Council meetings held on the first and third Wednesdays of each month.
Meeting Location: City Hall, 710 NW Wall St. Bend, OR

Where Our Water Comes From

Our water sources include both surface water and ground water. The City's surface water supply comes from a protected and isolated watershed, and our ground water supply is from the Deschutes regional aquifer. Annual snowmelt and precipitation supplies the aquifer with an average recharge of 3800 cubic feet per second (cfs) annually. Averaged over the year that is about 2.4 billion gallons per day of recharge to the aquifer.

The City of Bend's groundwater supply consists of nine well fields. Well depths range from 400 ft to 1000 ft. The water quality of these wells is very similar to our surface source. These wells are used to meet peak summer demand and supplement surface water source when quality is not acceptable due to turbidity from snow melt or heavy precipitation.

Source Water Assessment

A Source Water Assessment for the City of Bend's surface water was completed in 2003. The assessment consists of, (1) identification of the Drinking Water Protection area, (2) identification of potential sources of pollution within the Drinking Water Protection area, (3) determination of the susceptibility or relative risk to the surface water from those sources. A copy of this report is on file for viewing by contacting the City of Bend at 541-317-3000. We are currently in the process of completing the Source Water Assessment of all City of Bend ground water wells.

Important Information

Some individuals may be more vulnerable to contaminants in drinking water than the general population. People that are immuno-compromised such as a person with cancer undergoing chemotherapy, a person who has undergone an organ transplant, people with HIV/AIDS or other immune system disorders, some elderly, and some infants can be particularly at risk from infection. These individuals should seek advice from their healthcare providers.

Guidelines from the U.S. Environmental Protection Agency and Centers for Disease Control about appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Our Results Meet or Exceed Standards

Under Federal and State laws, the City of Bend Public Works Department routinely monitors for over 200 regulated and unregulated contaminants in all sources of your drinking water, including pesticides and radioactive material. The data in the following tables are from January 1, 2012 to December 31, 2012, unless otherwise noted. Although Bend's water supplies are tested for all regulated and many unregulated contaminants, only contaminants that have been detected in the water are included in this report. Through our monitoring and testing, some contaminants have been detected. The results, however, meet or surpass all State and Federal drinking water standards.

Healthy Household Plumbing: Lead and Copper

The U.S. Environmental Protection Agency requires all water providers to include in the report this important language about lead, regardless of levels occurring in water samples:

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 Bend Public Works Department 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 1-800-426-4791 or www.epa.gov/safewater/lead.

Regulated and Unregulated Contaminants Detected in 2012 PWSID# 4100100

Regulated Contaminant	Minimum Amount Detected	Maximum Amount Detected	MCL, Treatment Technique or MRDL	MCLG or MRDLG	Source of Substance	In Compliance?
Source Water from Bridge Creek Watershed						
Turbidity	0.11 NTU	1.43 NTU	Cannot exceed 5 NTU more than 2 times in 12 months	N/A	Soil runoff	YES
Total Organic Carbon	ND	0.82 ppm	N/A	N/A	Naturally present in the environment	YES
Giardia lamblia	ND	3 samples (of 10 Liters) each had 1 *Giardia* cyst	Treatment technique required: Disinfection to kill 99.9% of cysts	N/A	Human or animal fecal waste	YES
Fecal Coliform	ND	1 sample tested greater than 20 colonies per 100 mL of water *	At least 90% of samples during the previous 6 months must have 20 or fewer colonies per 100 mL of water	0		YES
Entry Points to Distribution System – from Bridge Creek Watershed and Groundwater Well Fields						
NUTRIENTS, METALS, AND MINERALS						
Nitrate-Nitrogen	ND	0.23 ppm	10 ppm	10 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	YES
Fluoride	0.10 ppm	0.37 ppm	4 ppm	4 ppm	Erosion of natural deposits	YES
Sodium (Unregulated)	ND	9.41 ppm	N/A	20 ppm		YES
Distribution System of Reservoirs and Mains						
MICROBIOLOGICAL CONTAMINANTS						
Total Coliform	ND	1 sample out of 116 in July (0.9%) tested positive †	No more than 5% samples test positive in any month	Zero positive tests	Naturally present in the environment	YES
DISINFECTION BYPRODUCTS						
Haloacetic Acids	ND	33.4 ppb	60 ppb	N/A	Byproduct of drinking water disinfection	YES
Total Trihalomethanes	2.0 ppb	34.8 ppb	80 ppb			YES
DISINFECTION RESIDUAL						
Free Residual Chlorine	0.20 ppm	1.55 ppm	4 ppm	4 ppm	Remaining chlorine from disinfection process	YES
Lead and Copper Samplings at High-Risk Residential / Commercial Water Taps						
Regulated Contaminant	**90th Percentile Value**	**Number of Sites Exceeding Action Level**	**Lead and Copper Rule Exceedance**	**MCLG**	**Source of Substance**	**In Compliance?**
Copper	0.19 ppm	0 of 30 samples (0%) exceeded the Action Levels for both Copper and Lead	More than 10% of homes / commercial buildings have levels greater than 1.3 ppm for Copper and 15 ppb for Lead	1.3 ppm	Corrosion of household and commercial plumbing systems	YES
Lead	3.0 ppb			0 ppb		

Monitoring And Reporting Of Compliance Data Violations

Our water system failed to report the routine coliform sampling data collected March 2012 in the required allotted time frame. We took all the samples accurately and on-time, but transferred the data to the Oregon Health Authority Drinking Water Program six days late. The implementation of a new reporting system should prevent this type of reporting oversight.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or are exposed to human or animal wastes. Since wildlife inhabits the Bridge Creek watershed, the City regularly monitors for Cryptosporidium and has done so since 2005. Our monitoring indicates it's presence at low levels in our source water. Cryptosporidium was not detected in the twelve samples collected during 2012 at our CT Basin intake plant. Ingestion of Cryptosporidium may cause Cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

Water Reservoirs and CT Basin

Notes on Regulated and Unregulated Contaminants detected in 2012

Turbidity: The Bend Watershed is an unfiltered surface water supply. Turbidity levels in unfiltered water must not exceed 5 NTU more than two times in a 12 month period. The typical cause of turbidity is sediment suspended in the water that can interfere with disinfection and provide a medium for microbial growth. Large storm events and snow melt can result in increased turbidity, causing the Bend Public Works Department to shut down the surface water system and serve water from the groundwater well fields.

Total Organic Carbon: Total Organic Carbon (TOC) is naturally found in water and can react with disinfectants to produce disinfection by-products (DBPs). The City of Bend monitors for TOC to qualify for reduced DBP monitoring. Surface water systems are eligible for reduced DBP monitoring when DBP levels are ≤ 50% of the MCL and TOC monitoring is ≤ 4.0 ppm.

Giardia: Wildlife in the watershed may be hosts to Giardia lamblia, the organism that causes giardiasis. The City of Bend uses chlorine to control these organisms.

Fecal Coliform Bacteria: The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. The City of Bend uses chlorine to kill these bacteria.

Nitrate – Nitrogen: Nitrate, measured as nitrogen, can support microbial growth (bacteria and algae). Nitrate levels exceeding the standards can contribute to health problems. At the levels found in Bend's drinking water, Nitrate is unlikely to contribute to adverse health effects.

Fluoride and Sodium (Unregulated): These metals are naturally occurring trace elements in water. The City of Bend does not add fluoride to the water.

Total Coliform Bacteria: Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.

Disinfection Byproducts: During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally occurring organic matter in the water. These byproducts can have negative health effects. Trihalomethanes and Haloacetic acids are regulated disinfection byproducts that have been detected in Bend's water. The disinfection process is carefully controlled to keep byproduct levels low.

Free Chlorine Residual: Free chlorine is a measurement of chlorine residual in our distribution system. The City of Bend adds chlorine to its water during the disinfection process to eliminate microbial contaminants such as Giardia and E. coli.

Copper and Lead: These metals are found in natural deposits and are also used in household plumbing materials. There is no maximum contaminant level (MCL) for copper and lead at the entry point to the distribution system. Copper and lead are regulated at customers' taps.

Definitions and Units of Measure

Action Level
The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which 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

Not Applicable (N/A)

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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Nephelometric Turbidity Unit (NTU)
A measure of water's clarity (turbidity).

Not Detected (ND)
Substance not detectable using current monitoring equipment.

Part per Million (ppm)
Also known as milligrams per liter (mg/L) which is equal to the number of milligrams of a substance in one liter of water. One part per million is equal to 1,000 parts per billion.

Part per Billion (ppb)
Also known as micrograms per liter (µg/L) which is equal to the number of micrograms of a substance in one liter of water

90th Percentile
This means that 90 percent of the samples collected were equal to or below the value reported.

Treatment Technique
A required process intended to reduce the level of a contaminant in drinking water

Request a Paper Copy

This year, you are likely reading the report online, rather than the traditional paper copy sent by mail. The Environmental Protection Agency recently changed the requirements to allow utilities to communicate this important information digitally.

Customers are still able to request a paper copy and can do so by calling 541-317-3000 or completing a request form online at bendoregon.gov/waterreportrequest.

This document is also available online at bendoregon.gov/water.

Spanish (Espanol)

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que pueda traducir la informacion.

This report contains important information about the quality of your drinking water. Please read this report or contact someone who can translate the information.

Contact Us

Water Quality Manager: Steve Prazak 541-317-3000
Water Utility Manager: Shannon Ostendorff 541-317-3000
Water Billing: Finance Dept 541-388-5515

City of Bend Public Works Department
PO Box 431, Bend, OR 97709

Accommodation Information for People with Disabilities

The City of Bend will provide auxiliary aids services to persons with disabilities. To request an ADA accommodation of this information in an alternate format such as Braille, large print, electronic format, and audio cassette tape please contact the City Manager's office 541-388-5517 and/or 541-693-2141 or e-mail: Accessibility@ci.bend.or.us.