



Amanda Fritz, Commissioner
Michael Stuhr, P.E., Administrator



1120 SW 5th Avenue
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water

March 9, 2020

Carrie Gentry
Oregon Health Authority
Drinking Water Services
PO Box 14450
Portland, OR 97293-0450

Subject: Bilateral Compliance Agreement – Annual Outreach Report

Dear Carrie:

This letter and attachment constitutes the Portland Water Bureau's (PWB) submission of its Annual Outreach report for the Bilateral Compliance Agreement, Section IV.D.7 (Oregon Health Authority; December 18, 2017). This report covers the period of January – December 2019.

If you have any questions regarding this report, please feel free to contact me at (503) 823-7648 or yone.akagi@portlandoregon.gov.

Sincerely,

Yone Akagi, P.E.
Water Quality Manager

Enclosure

Cc: Ann Levy, Chris Wanner, Scott Bradway



Annual Outreach Report

Bilateral Compliance Agreement

March 5, 2020

Reporting Period: January 1 – December 31, 2019

As part of the Bilateral Compliance Agreement (BCA) Interim Measures, Section IV.D.7 requires that Portland Water Bureau (PWB) report to Oregon Health Authority – Drinking Water Services (OHA) annually on the activities completed under the outreach plan proposed to OHA under section IV.C.5.

On March 14, 2018 the PWB submitted a proposed Outreach Plan to Health Care Providers for People Most Vulnerable to *Cryptosporidium* in Drinking Water to OHA. On August 2, 2018 OHA responded to the proposed plan with several comments. The PWB agreed to these comments and incorporated them into the revised annual outreach plan (attachment 1) submitted to OHA in the 2018 Annual Outreach Report.

The following is a summary of the outreach activities completed as part of the annual outreach plan from January 1 through December 31, 2019.

1. Clinician Update

On October 31, 2019, the Tri-County Health Officer for Clackamas, Multnomah and Washington Counties issued a Clinician Update (attachment 2) to medical providers who care for immuno-compromised patients as well as the infectious disease providers in the tri-county regions. The update contains background on *Cryptosporidium*, diagnosis recommendations, health effects of cryptosporidiosis, laboratory methods, how to register for PWB notification of *Cryptosporidium* detections and encourages patients to sign up at publicalerts.org to receive emergency notices such as drinking water advisories.

2. Delivery of Educational Poster and Flyers

PWB worked with OHA and the Tri-county Health Officer to develop an educational poster (attachment 3) and flyer (attachment 4) for immuno-compromised patients. The poster and copies of the fliers along with a cover letter (attachment 5) explaining their purpose and how to request additional copies was mailed to all medical providers that received the provider alert from the Tri-county Health Officer on November 19, 2019.

3. *Cryptosporidium* E-mail List

PWB has developed an e-mail list sign-up (attachment 6) that allows concerned customers and medical providers to receive notification whenever public notification of *Cryptosporidium* detections occur. This will allow those who need and want to know about *Cryptosporidium* detections to be able to receive that information in a timely manner. The availability of the e-mail list was shared in the clinician update and is posted on the PWB website. Approximately 136 customers and providers have signed up to receive notification through the end of this reporting period.

4. Public Notification

To inform the public that their drinking water is not treated for *Cryptosporidium*, the potential associated risk and Portland's plans to treat Bull Run drinking water, the BCA requires the following public notification actions outlined in Section IV.C:

Section IV.C.1 requires PWB to issue a press release and use social media as appropriate to notify the public of *Cryptosporidium* detections at the intake within one business day of validated results when a boil water notice is not deemed necessary. The notice must include the language in Appendix A of the BCA. With OHA approval, press releases may be issued that summarize results from the previous detection that do not exceed seven-day intervals. Table 1 lists the public notification dates (press releases and social media) and delivery timeframe for each *Cryptosporidium* detection in 2019.

Table 1: Public Notification of *Cryptosporidium* Detections

<i>Cryptosporidium</i> Sample Date(s)	Public Notification Date	Delivery (1 business day or periodic)
12/31/2018 1/2/2019	1/4/2019	Periodic
1/7/2019 1/8/2019	1/11/2019	Periodic
1/14/2019	1/18/2019	Periodic
1/20/2019 1/23/2019	1/25/2019	Periodic
1/29/2019 1/30/2019	2/1/2019	Periodic
2/3/2019 2/5/2019	2/8/2019	Periodic
2/10/2019 2/12/2019 2/13/2019	2/15/2019	Periodic
2/25/2019	2/28/2019	One business day
2/27/2019 3/4/2019	3/7/2019	Periodic
3/11/2019 3/12/2019	3/15/2019	Periodic
3/24/2019	3/27/2019	One business day
4/2/2019 4/3/2019	4/5/2019	Periodic
4/9/2019 4/10/2019	4/12/2019	Periodic
4/14/2019 4/15/2019	4/19/2019	Periodic
4/21/2019	4/26/2019	Periodic
4/29/2019	5/3/2019	Periodic
5/12/2019	5/16/2019	One business day
10/22/2019	10/25/2019	One business day
10/29/2019 10/30/2019	11/1/2019	Periodic
11/1/2019	11/8/2019	Periodic

11/10/2019	11/15/2019	Periodic
11/17/2019 11/19/2019	11/22/2019	Periodic
12/1/2019 12/4/2019	12/6/2019	One business day
12/8/2019 12/9/2019	12/13/2019	Periodic
12/16/2019	12/20/2019	Periodic

For each detection, the public was notified by issuing a press release (attachment 7) to local media using Flash News. In addition, the press release information is posted on PWB's website blog (attachment 8) with relevant links to the blog posted on the social media sites Facebook and Twitter (attachment 9).

Section IV.C.2 requires PWB to notify the public, at least quarterly, that it does not treat for *Cryptosporidium* using the language in Appendix A of the BCA. The quarterly public notice may be in the form of a press release (attachment 10) and including the language in the Consumer Confidence Report may substitute for the notice during the quarter it is delivered. Table 2 lists the date and manner in which this notification was delivered for each quarter in 2019.

Table 2: Quarterly public notification.

Quarter	Date	Delivery Method
Q1 2019	January 4, 2019	<i>Cryptosporidium</i> Detection Press Release
Q2 2019	April 5, 2019	<i>Cryptosporidium</i> Detection Press Release
Q3 2019	September 26, 2019	Press Release
Q4 2019	October 25, 2019	<i>Cryptosporidium</i> Detection Press Release

Section IV.C.3 requires PWB to continually post on its website, linked from the homepage, the language included in the BCA Appendix A. PWB is also required to share this language with other providers who receive water from PWB for posting on their websites as applicable. On PWB's website homepage is a link titled "Learn About *Cryptosporidium*" (attachment 11) that goes to the Information on the *Cryptosporidium* page (www.portlandoregon.gov/water/crypto) (attachment 11) where the language from Appendix A is posted. This information was shared with wholesale providers on February 8, 2019 (attachment 12).

Section IV.C.4 requires PWB to include the information included in the BCA Appendix A in PWB's Consumer Confidence Report and to share this language with wholesale providers. PWB delivered the Consumer Confidence Report to customers on June 1, 2019 (attachment 13) and provided the required language to wholesale providers on March 21, 2019 (attachment 14).

5. Public Health Surveillance

PWB notifies the Tri-county Health Officer of all detections for *Cryptosporidium* from the Bull Run Intake. Additionally, PWB, MCHD and OHA Acute and Communicable Disease Program routinely meet to review cryptosporidiosis case occurrence, Bull Run monitoring results and water quality data and discuss other potential issues related to *Cryptosporidium* in drinking water. These meetings are scheduled to occur on a monthly basis, and if there is a need to postpone, information is shared electronically.

6. Proposed Changes to Annual Outreach Plan

No changes to the attached Outreach Plan to Health Care Providers for People Most Vulnerable to *Cryptosporidium* in Drinking Water are being proposed for this year.

Attachments

1. Outreach Plan to Health Care Providers for People Most Vulnerable to *Cryptosporidium* in Drinking Water – September 13, 2018
2. Clinician Update – sent October 31, 2019
3. Are You At Risk from *Cryptosporidium* in Drinking Water Poster
4. Important Information About *Cryptosporidium* in Drinking Water for Immunocompromised Individuals Flyer
5. Letter to Providers – to be sent with informational posters and flyers
6. Screenshot of *Cryptosporidium* detection alert registration form
7. Example *Cryptosporidium* detection press release
8. Example PWB *Cryptosporidium* detection blog
9. Example *Cryptosporidium* detection social media posts
10. September 26, 2019 *Cryptosporidium* update press release
11. Screenshot of PWB home page and Information on *Cryptosporidium* web page
12. E-mail sent to wholesale providers with the BCA Appendix A language for website
13. PWB 2019 Consumer Confidence Report
14. Wholesale provider CCR memo with BCA Appendix A language



Outreach Plan to Health Care Providers for People Most Vulnerable to *Cryptosporidium* in Drinking Water

Prepared by the
Portland Water Bureau

Submitted to the
Oregon Health Authority
Public Health Division Drinking Water Services

March 14, 2018

REVISED September 13, 2018

Background

On December 18, 2017, the Portland Water Bureau (PWB) and Oregon Health Authority Drinking Water Services (OHA) entered into a Bilateral Compliance Agreement (BCA) outlining a schedule for the construction of drinking water treatment to meet the treatment requirements for *Cryptosporidium* and interim measures to protect public health until treatment is installed.

As part of the requirements of the BCA, section IV.C.5 requires PWB to develop a plan to “conduct outreach to health care providers of people most vulnerable to *Cryptosporidium* (such as people with AIDS, people with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs) within the Bull Run service area”.

In February 2017, after several weeks of detections of *Cryptosporidium* from the Bull Run intake, the Multnomah County Health Department (MCHD) issued a clinician update to all clinicians in the Portland tri-county area. The clinician update was used to notify medical providers of the recent detections of *Cryptosporidium*, encouraged all providers to consider cryptosporidiosis in their diagnosis for patients exhibiting possible symptoms and asked providers of immunocompromised patients to review the CDC *Cryptosporidium* information for immunocompromised persons and to consider taking additional precautions.

The clinician update, combined with the other public notification efforts by PWB (press release, website updates etc.) led to an increase in testing for cryptosporidiosis in 2017. An MCHD analysis of this data did not identify any specific vulnerable populations at higher risk of *Cryptosporidium* infection. These detections were not linked to an increase in human *Cryptosporidium* cases, and the public risk of *Cryptosporidium* from the drinking water remains low.

The following Outreach Plan was developed in coordination with MCHD and incorporates revisions from OHA to meet the above-mentioned requirement of the BCA.

Outreach to Vulnerable Populations

On an annual basis until the treatment requirements of the BCA are met, PWB will implement the following six elements to meet the BCA's outreach requirements for those potentially vulnerable to *Cryptosporidium*.

1. Clinician Update

PWB will work with MCHD to issue a clinician update targeted at healthcare providers of immunocompromised patients. The update will also be provided to the medical directors at the regional clinics that care for immunocompromised patients. The update will include:

- Background on *Cryptosporidium* in Bull Run source water and that PWB does not currently treat for *Cryptosporidium*.
- Recommendations for providers to consider cryptosporidiosis diagnosis and to review *Cryptosporidium* information with their patients.
- Information on cryptosporidiosis, including symptoms and health effects.
- Review of strengths and weaknesses of laboratory methods to detect cryptosporidiosis.
- Opportunity for providers to register for a PWB e-mail list to receive updates on *Cryptosporidium* detections.
- Recommendation that providers educate their patients about registering at www.publicalerts.org to receive direct notification in the event additional public health protections are necessary as a result of drinking water contamination.

2. Delivery of Educational Poster and Flyers

The Portland Water Bureau will develop printed posters and flyers targeting people most vulnerable to *Cryptosporidium* based on CDC's guidance for prevention and control of cryptosporidiosis from drinking water. The poster and flyers will be mailed to medical providers identified in task 1 to be displayed and provided directly to patients.

3. *Cryptosporidium* E-mail List

Through the clinician update and on the PWB website, providers of the immunocompromised and their patients will be encouraged and able to sign-up for a notification e-mail list to receive updated information on *Cryptosporidium* detections in water.

4. Public Notification

As agreed to in the BCA, PWB will be using several methods to notify the general public that it does not treat for *Cryptosporidium* as well as timely notification of detections. While these efforts target the general public, they will also contain information on the potential increased risk to immunocompromised persons and serve as outreach to these populations as well. These methods include *Cryptosporidium* detection press releases, minimum of quarterly press-releases when there have been no detections, information in PWB's Consumer Confidence Report, website updates with each detection and the use of social media.

5. Public Health Surveillance

PWB will continue to coordinate with MCHD routinely when there are detections of *Cryptosporidium* in the Bull Run source water as well as annually, to review occurrence of cryptosporidiosis in the Portland region and analysis of the infected populations to identify new populations that may be at greater risk for *Cryptosporidium* infection.

6. Reporting to OHA

As agreed to in the BCA section IV.D.7, PWB will annually provide a report to OHA summarizing the outreach activities performed under the BCA. This report will be submitted on or before March 10 of each year and summarize the activities of the previous calendar year.

Attachment 2. Clinician Update 10-31-2019

From: [Paul Lewis](#)
To: [paul. f. lewis](#); [Vines, Jennifer](#)
Subject: Annual Cryptosporidium Information for Compromised Host Medical Providers
Date: Thursday, October 31, 2019 5:43:08 PM
Attachments: [ProviderAdvisory-Cryptosporidium 10-31-2019 FINAL.pdf](#)

Dear Provider,

Pasted below and attached is the annual information update on Cryptosporidiosis and Drinking Water. Within a few weeks you will receive posters and brochures to aid with patient education. Please feel free to share this information with other clinicians who care for patients with compromised immune systems. We appreciate your on-going partnership.

Paul Lewis, MD, MPH
Health Officer Multnomah County, Oregon
Tri-County Health Officer, Clackamas, Multnomah, Washington Counties

Jennifer Vines, MD, MPH
Deputy Health Officer Multnomah County Oregon

***Cryptosporidium* and Drinking Water**

10/31/2019

The Portland Water Bureau supplies drinking water to a large portion of the Portland region, but the water is not treated for *Cryptosporidium*. Since 2017, the Portland water Bureau has occasionally detected low levels of *Cryptosporidium* during routine monitoring from the Bull Run water supply. These detections have not been linked to an increase in human *Cryptosporidium* cases and the risk to the general public of *Cryptosporidium* from the drinking water is low. Certain patient populations, however, such as those with compromised immune systems may be at higher risk of protracted illness from *Cryptosporidium*. Although recent media coverage of the first detection of *Cryptosporidium* this fall has caused an increase in questions from the public, this pattern has been observed in previous years, none of which were associated with an increase in reported cases of Cryptosporidiosis.

Please take the following steps in your practice, especially for immunocompromised patients:

1. Review the information on *Cryptosporidiosis* and the water supply on [OHA's website](#) and the [CDC website for *Cryptosporidium* Information for Immunocompromised Persons](#) with relevant patients. Such patients may wish to drink boiled, filtered or commercially bottled water. In the coming weeks, the Portland Water Bureau will be mailing you an informational poster and brochures; we encourage you to display these in your office to educate your patients.
2. Consider cryptosporidiosis in the differential diagnosis for patients experiencing unexplained profuse watery diarrhea of greater than 5 days duration.

Attachment 2. Clinician Update 10-31-2019

- a. *Cryptosporidium* testing often needs to be specifically ordered since it may not be included in routine ova and parasite stool examination.
- b. Because of intermittent oocyst excretion, three stool specimens collected on separate days should be examined.
- c. For more information on laboratory testing, please see <https://www.cdc.gov/dpdx/cryptosporidiosis/>
- d. PCR testing methods may have greater sensitivity and specificity than microscopic detection or screening tests.

More about *Cryptosporidium*:

Illness from *Cryptosporidium* infection typically begins 2-10 days after exposure and includes profuse, watery diarrhea, stomach cramps, nausea, fever, and weight loss. For immunocompetent persons, symptoms may last one to two weeks; for immunocompromised persons, especially with CD4 counts < 200/ μ l, symptoms can be chronic and more severe. The infection is typically self-limited in otherwise healthy individuals. Nitazoxanide is FDA-approved for treatment of diarrhea caused by *Cryptosporidium* in immunocompetent persons; its effectiveness in immunosuppressed individuals is unclear.

Health care providers and clinical laboratories are required to [report cases and suspect cases of cryptosporidiosis](#) to local health departments within **one working day** of identification.

Options for additional notifications:

Providers who wish to receive updates on *Cryptosporidium* detections from the Bull Run can register at www.portlandoregon.gov/water/cryptoupdate. This website can also be shared with patients who would benefit from this information.

In addition, providers can direct immunosuppressed patients to subscribe to emergency notifications at www.publicalerts.org to receive timely notification if additional public health protections are recommended as a result of *Cryptosporidium* detections.

For additional information:

- About case reporting, lab testing, or patient education, contact your local Health Department communicable disease program
 - Clackamas County: 503-655-8411
 - Multnomah County: 503-988-3406
 - Washington County: 503-846-3594
- About Bull Run drinking water contact the Portland Water Bureau Water Quality Line 503-823-7525
- CDC information on *Cryptosporidium*

Attachment 2. Clinician Update 10-31-2019

http://www.cdc.gov/parasites/crypto/gen_info/infect.html



This email was encrypted for your privacy and security

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10/31/2019

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Options for additional notifications:

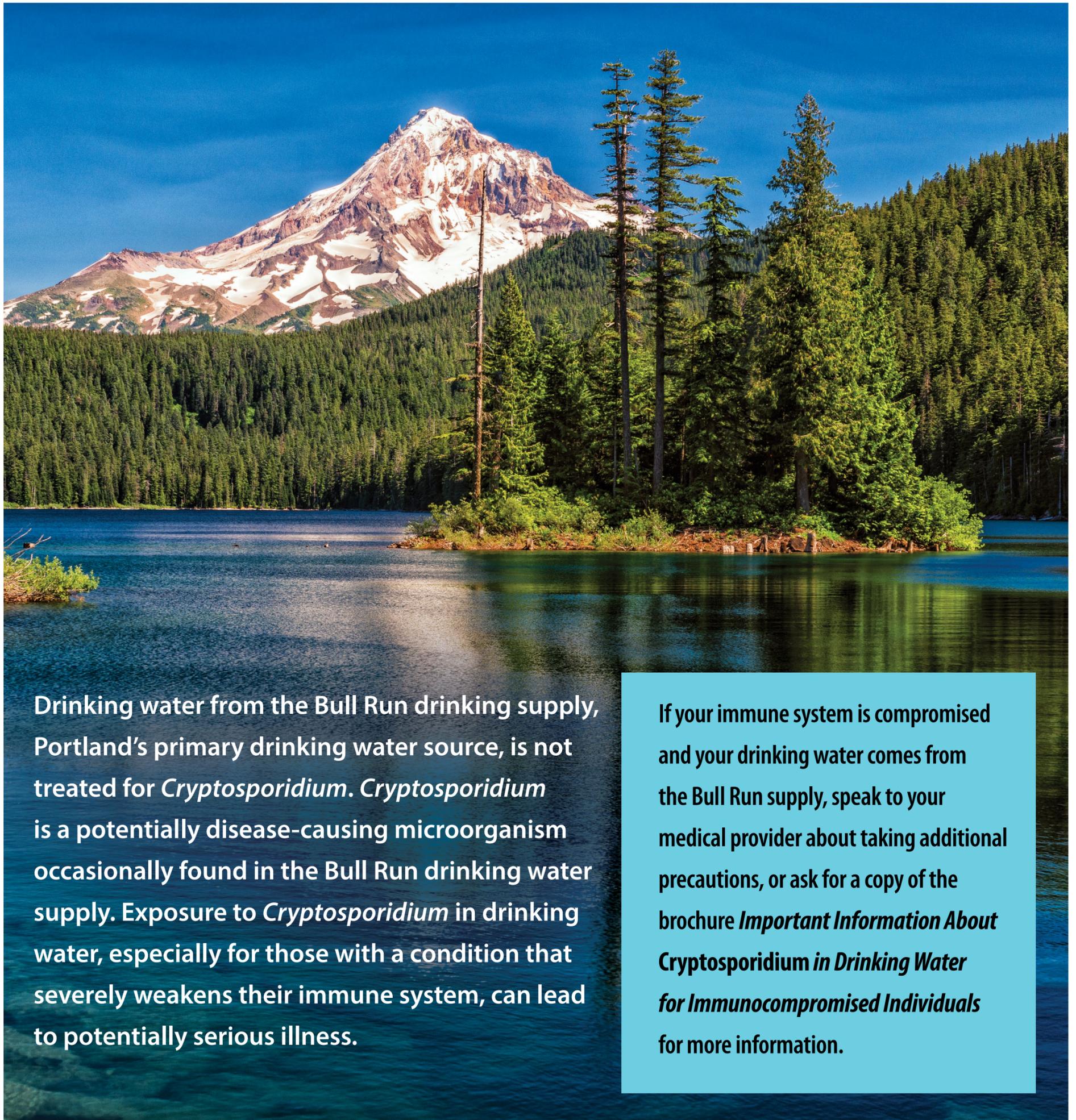
Providers who wish to receive updates on *Cryptosporidium* detections from the Bull Run can register at www.portlandoregon.gov/water/cryptoupdate. This website can also be shared with patients who would benefit from this information.

In addition, providers can direct immunosuppressed patients to subscribe to emergency notifications at www.publicalerts.org to receive timely notification if additional public health protections are recommended as a result of *Cryptosporidium* detections.

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 - Washington County: 503-846-3594
- About Bull Run drinking water contact the Portland Water Bureau Water Quality Line 503-823-7525
- CDC information on *Cryptosporidium*
http://www.cdc.gov/parasites/crypto/gen_info/infect.html

Are You At Risk from *Cryptosporidium* in Drinking Water?



Drinking water from the Bull Run drinking supply, Portland's primary drinking water source, is not treated for *Cryptosporidium*. *Cryptosporidium* is a potentially disease-causing microorganism occasionally found in the Bull Run drinking water supply. Exposure to *Cryptosporidium* in drinking water, especially for those with a condition that severely weakens their immune system, can lead to potentially serious illness.

If your immune system is compromised and your drinking water comes from the Bull Run supply, speak to your medical provider about taking additional precautions, or ask for a copy of the brochure *Important Information About Cryptosporidium in Drinking Water for Immunocompromised Individuals* for more information.

The Portland Water Bureau and Burlington, City of Gresham, City of Sandy, City of Tualatin, Green Valley, GNR, Hideaway Hills, Lake Grove, Lorna Portland Water, Lusted, Palatine Hill, Pleasant Home, Raleigh, Rockwood, Skyview Acres, Tualatin Valley, Two Rivers, Valley View and West Slope Water Districts receive all or part of their drinking water supply from the Bull Run. Contact your drinking water provider to find out if your drinking water comes from the Bull Run. To find your drinking water provider, visit www.regionalh2o.org.

www.portlandoregon.gov/water/crypto



The Bull Run Watershed



The Bull Run Watershed is a highly protected unfiltered drinking water source. It is the largest drinking water source in the state of Oregon and provides drinking water to all of Portland and many surrounding communities. *Cryptosporidium*, a potentially disease-causing microorganism, is occasionally found in the Bull Run drinking water supply. Exposure to *Cryptosporidium* in drinking water, especially for those with a condition that severely weakens their immune system, can lead to potentially serious illness.



Portland Water Bureau

1120 SW Fifth Avenue, Room 600
Portland, OR 97204 (Mailing Only)
503-823-7404

Amanda Fritz, Commissioner
Michael Stuhr, P.E., Director

Water Quality Line

8:30 a.m. – 4:30 p.m., Monday – Friday
503-823-7525

WBWaterLine@portlandoregon.gov

Please contact us for translation or interpretation, or for accommodations for people with disabilities.

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www.portlandoregon.gov/water/access
503-823-7432 (TTY: 503-823-6868, Relay Service: 711)

IMPORTANT INFORMATION ABOUT

Cryptosporidium in Drinking Water for Immunocompromised Individuals



Protecting Yourself from *Cryptosporidium* in Drinking Water



The Bull Run drinking water supply is not currently treated for *Cryptosporidium*. If you get your drinking water from Portland, or Portland provides drinking water to your provider, you cannot be sure that your drinking water does not contain *Cryptosporidium*. As a result, if you have a condition that compromises your immune system you may wish to avoid drinking tap water. This includes water and ice from a refrigerator and drinks made at a soda fountain, which are usually made with tap water.

Protective Measures to Consider



Safe commercially bottled water

Water labeled with any of the following messages has been processed by a method effective against *Cryptosporidium*: reverse osmosis, distilled, filtered through an absolute 1 micron or smaller filter, or “One micron absolute”.



Boiling water before consuming

Boiling is the best extra measure to ensure that your water is free of *Cryptosporidium* and other microbes. Heating water at a rolling boil for 1-minute kills *Cryptosporidium* and other microbes. After the boiled water cools, put it in a clean bottle or pitcher with a lid and store it in the refrigerator. Use the water for drinking, cooking, or making ice.



Filtering your tap water

Many, but not all, available home water filters remove *Cryptosporidium*. Filters that have the words “reverse osmosis” on the label protect against *Cryptosporidium*, as do filters with “absolute 1 micron.” Also look for the words “cyst reduction” or “cyst removal” for a tested filter that works against *Cryptosporidium*. The wording should indicate that the filter is listed and labeled to NSF/ANSI standard 53 or 58 by an ANSI accredited certification organization.

Filters collect microorganisms from your water, so someone who is not immunocompromised should change the filter cartridges for you; if you do it yourself, wear gloves and wash your hands well with soap and water afterwards. Filters may not remove *Cryptosporidium* as well as boiling does because filters may sometimes have manufacturing flaws that allow small numbers of *Cryptosporidium* parasites to get past the filter. Poor filter maintenance or failure to replace filter cartridges as recommended by the manufacturer can also cause your filter to fail.



Using a home distiller

You can remove *Cryptosporidium* and other microorganisms from your water with a home distiller. If you use one, you need to carefully store your water. After purification, put the water in a clean bottle or pitcher with a lid and store it in the refrigerator.

Water bottles and ice trays should be cleaned with soap and water before use when being used to store boiled, filtered or distilled water.

How the Portland Water Bureau is Protecting Public Health

After a series of low level detections of *Cryptosporidium* in the Bull Run drinking water supply during January – March of 2017, the Portland Water Bureau began work to construct a drinking water filtration plant for the Bull Run supply. The new treatment plant is estimated to be operational by September 2027. The new Bull Run filtration plant will remove *Cryptosporidium*, make the water system more reliable, and provide consistent, excellent water to customers.

While the filtration plant is being constructed, the Portland Water Bureau will continue to take efforts to ensure public health protection. These efforts include:

- Maintain the existing protections for the Bull Run Watershed to minimize sources of *Cryptosporidium*.
- Continued monitoring of the Bull Run supply for *Cryptosporidium*.
- Work with public health officials to monitor for potential cases of cryptosporidiosis from drinking water.
- Notify the public to take extra precautions if *Cryptosporidium* in drinking water poses a risk to public health.

Additional Information

General Information on *Cryptosporidium* and preventive measures:

Centers for Disease Control and Prevention:

www.cdc.gov/parasites/crypto/gen_info/preventic.html

Information on drinking water safety and quality:

Portland Water Bureau Water Quality Line:

503-823-7525

wewaterline@portlandoregon.gov

www.portlandoregon.gov/water/cryptop

To receive updates on *Cryptosporidium* detections from the Bull Run, register at

www.portlandoregon.gov/water/cryptoupdate



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Michael Stuhr, P.E., Administrator
1120 SW Fifth Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



November 19, 2019

Dear Provider,

In early November you received a Clinician Update about *Cryptosporidium* and Drinking Water from the Tri-County Health Officer. The advisory, informing you that water from the Portland Water Bureau is not treated for *Cryptosporidium*, also stated that the Portland Water Bureau would be mailing informational posters and brochures that can be displayed in your office as an additional resource to your patients.

Enclosed please find posters and brochures that we encourage you to display in your office. If you would like additional copies of either of these, please contact the Portland Water Bureau Water Quality Line at 503-823-7525 or wewaterline@portlandoregon.gov. If you have additional questions about *Cryptosporidium* or patient education, please contact your local Health Department communicable disease program:

- Clackamas County: 503-655-8411
- Multnomah County: 503-988-3406
- Washington County: 503-846-3594

Thank you for your support and assistance in educating your patients about this issue,

Scott Bradway
Water Quality Information Manager
Portland Water Bureau

Attachment 6. Screenshot of Cryptosporidium detection alert registration form

The CITY OF PORTLAND Oregon

Select Language

Search PortlandOregon.gov

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 **Portland Water Bureau**
From forest to faucet, we deliver the best drinking water in the world.

CUSTOMER SERVICE: 503-823-7770
GENERAL INFORMATION: 503-823-7404
[MORE CONTACT INFO](#)

About Us What We Do Programs & Services Library Water Blog Water Cooler

What We Do Water Quality Information on Cryptosporidium Sign-Up for Portland Water Bureau Cryptosporidium Updates [Edit Description](#)

Portland Water Bureau Cryptosporidium Updates Sign-Up * Required Field

The Portland Water Bureau is in the process of constructing a new treatment facility that will remove Cryptosporidium from Bull Run drinking water. The new treatment facility will be completed by September, 2027. Until that time, customers and medical providers who wish to receive an e-mail notification when the Portland Water Bureau detects Cryptosporidium can enter their contact information below. This information will not be shared and will only be used to communicate about project developments and drinking water safety. You may opt out at anytime. Visit www.portlandoregon.gov/water/crypto for more information on Cryptosporidium and Portland's drinking water.

Please enter your contact information below.

Name*	<input type="text"/>
Email*	<input type="text"/>
ZIP Code*	<input type="text"/>
I am a	<input type="radio"/> Customer <input type="radio"/> Medical provider



Amanda Fritz, Commissioner
Michael Stuhr, P.E., Administrator
1120 SW Fifth Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



MEDIA RELEASE

For Immediate Release
Dec. 20, 2019

For more information, contact the
Water Bureau's Public Information
Officer at 503-823-8064

***Cryptosporidium* Monitoring Update**

Detections from routine monitoring in the Bull Run. Customers do not need to take any additional precautions at this time.

Since 2017, the Portland Water Bureau has detected low levels of *Cryptosporidium* from routine monitoring. Monitoring results were received from the Bull Run Watershed intake for *Cryptosporidium*, a potentially disease-causing microorganism. In the 50-liters sampled daily, between Sunday, Dec. 15 and Wednesday, Dec. 18, one *Cryptosporidium* oocyst was detected in the sample collected on Dec. 16. *Cryptosporidium* was not detected in the samples collected on Dec. 15, Dec. 17 or Dec. 18. Prior to these detections, *Cryptosporidium* was last detected from the Bull Run Watershed intake on Dec. 9, 2019.

The Bull Run watershed is Portland's primary source of drinking water. The Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under drinking water regulations. Portland is working to install filtration by September 2027 under a compliance schedule with Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious or life-threatening illness. Examples of people with weakened immune systems include those with AIDS; those

Attachment 7. Example *Cryptosporidium* detection press release

with inherited diseases that affect the immune system; and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency (EPA) has estimated that a small percentage of the population could experience gastro-intestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their healthcare professional about the safety of drinking the tap water. The Portland Water Bureau and Burlington, City of Gresham, City of Sandy, City of Tualatin, Green Valley, GNR, Hideaway Hills, Lake Grove, Lorna Domestic Water, Lusted, Palatine Hill, Pleasant Home, Raleigh, Rockwood, Skyview Acres, Tualatin Valley, Two Rivers, Valley View and West Slope Water Districts receive all or part of their drinking water supply from the Bull Run. To learn if your drinking water comes from Bull Run, please contact your local drinking water provider.

The public and the media are encouraged to view all sampling results posted to the City's website at portlandoregon.gov/water/cryptoreresults. The bureau will notify the media and public immediately should further test results indicate a risk to public health and precautions are necessary.

Customers with questions regarding water quality can call the Water Line at 503-823-7525.

Attachment 8. Example PWB Cryptosporidium detection blog

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From forest to faucet, we deliver the best drinking water in the world.

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- Jan. 17, 2020: Cryptosporidium Monitoring Update
- Jan. 10, 2020: Cryptosporidium Monitoring Update
- Broken stuff? Fix it at a Fix-it Fair!
- Jan. 17, 2020: Administrative Review Committee
- Portland Water Bureau Encourages You to Remember to Drink Some Water on New Year's Eve
- Water Bureau Offices Closed for the New Year's Day Holiday on Wednesday, Jan 1.
- Water-Efficient Home for the Holidays
- Video: Portland Water Stories, Episode Two: Assembly Brewing
- 2019 in review: A candid Q & A with Mike Stuhr, Portland's chief of drinking water
- Dec. 20, 2019: Cryptosporidium Monitoring Update
- Water Bureau Offices Closed for the Christmas Holiday on Wednesday, Dec. 25
- Traffic Advisory: Gas Line Repair Closes SW Capitol Highway between SW Huber Street and SW Barbur Boulevard
- Dec. 13, 2019: Cryptosporidium Monitoring Update
- A Key Investment in Earthquake Preparedness for the Portland Region, the Washington Park Improvement Project Reaches Key Milestone

Dec. 20, 2019: Cryptosporidium Monitoring Update

Since 2017, the Portland Water Bureau has detected low levels of *Cryptosporidium* from routine monitoring. Monitoring results were received from the Bull Run Watershed intake for *Cryptosporidium*, a potentially disease-causing microorganism. In the 50-liters sampled daily, between Sunday, Dec. 15 and Wednesday, Dec. 18, one *Cryptosporidium* oocyst was detected in the sample collected on Dec. 16. *Cryptosporidium* was not detected in the samples collected on Dec. 15, Dec. 17 or Dec. 18. Prior to these detections, *Cryptosporidium* was last detected from the Bull Run Watershed intake on Dec. 9, 2019.

One *Cryptosporidium* oocyst was detected in the sample collected on Dec. 16. *Cryptosporidium* was not detected in the samples collected on Dec. 15, Dec. 17, or Dec. 18.

Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.



The City of Portland is committed to providing meaningful access. To request translation, interpretation, modifications, accommodations, or other auxiliary aids or services, contact 503-823-6868, Relay 711.

The Bull Run watershed is Portland's primary source of drinking water. The Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under drinking water regulations. Portland is working to install filtration by September 2027 under a compliance schedule with Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.

About Cryptosporidium

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious or life-threatening illness. Examples of people with weakened immune systems include those with AIDS; those with inherited diseases that affect the immune system; and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency (EPA) has estimated that a small percentage of the population could experience gastro-intestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their healthcare professional about the safety of drinking the tap water. The Portland Water Bureau and Burlington, City of Gresham, City of Sandy, City of Tualatin, Green Valley, GNR, Hideaway Hills, Lake Grove, Lorna Domestic Water, Lusted, Palatine Hill, Pleasant Home, Raleigh, Rockwood, Skyview Acres, Tualatin Valley, Two Rivers, Valley View and West Slope Water Districts receive all or part of their drinking water supply from the Bull Run. To learn if your drinking water comes from Bull Run, please contact your local drinking water provider.

More Information

The public and the media are encouraged to view all sampling results posted to the City's website at portlandoregon.gov/water/cryptoresults. The bureau will notify the media and public immediately should further test results indicate a risk to public health and precautions are necessary.

Customers with questions regarding water quality can call the Water Line at 503-823-7525.

Attachment 9. Example Cryptosporidium detection social media posts

Facebook Post

Photos from Portland Water Bureau's post

Dec. 20, 2019: *Cryptosporidium* Monitoring Update

One *Cryptosporidium* oocyst was detected in the sample collected on Dec. 16. *Cryptosporidium* was not detected in the samples collected on Dec. 15, Dec. 17, or Dec. 18.

Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.



Since 2017, the Portland Water Bureau has detected low levels of *Cryptosporidium* from routine monitoring. Low level *Cryptosporidium* detections may continue through the rainy season.

Consultation with public health officials has concluded that customers do not need to take any additional precautions at this time. People who are severely immune-compromised—such as people who have had an organ transplant, HIV/AIDS, or cancer treatment—should consult with their health care providers about the safety of drinking tap water.

Read the update at bit.ly/2EGusKu.

Like Comment Share

Write a comment...



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Portland Water Bureau @portlandwater · Dec 20, 2019
.@PortlandWater received results today from ongoing monitoring for *Cryptosporidium*. Since 2017, the Portland Water Bureau has detected low levels of *Cryptosporidium* from routine monitoring. Low-level *Cryptosporidium* detections may continue through the rainy season.

2 1

Portland Water Bureau @portlandwater · Dec 20, 2019
Consultation with public health officials has concluded that customers do not need to take any additional precautions at this time.

1

Portland Water Bureau @portlandwater

People who are severely immune-compromised—such as people who have had an organ transplant, HIV/AIDS, or cancer treatment—should consult with their health care providers about the safety of drinking tap water. Read the update at bit.ly/2EGusKu

Dec. 20, 2019: *Cryptosporidium* Monitoring Update

One *Cryptosporidium* oocyst was detected in the sample collected on Dec. 16. *Cryptosporidium* was not detected in the samples collected on Dec. 15, Dec. 17, or Dec. 18.

Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.



The City of Portland is committed to providing meaningful access. To request translation, interpretation, modifications, accommodations, or other auxiliary aids or services, contact 503-828-6868, Relay: 711.

9:20 AM · Dec 20, 2019 · Twitter Web App



Amanda Fritz, Commissioner
Michael Stuhr, P.E., Administrator

1120 SW Fifth Avenue
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



MEDIA RELEASE

For Immediate Release
Sept. 26, 2019

For more information, contact the
Water Bureau's Public Information
Officer at 503-823-8064

Bull Run Drinking Water Supply Not Treated for *Cryptosporidium*

Since 2017, the Portland Water Bureau has been seasonally detecting small amounts of *Cryptosporidium* coming from the Bull Run source. *Cryptosporidium*, a potentially disease-causing microorganism, has not been detected in Portland's drinking water this quarter.

Over the next eight years, the Portland Water Bureau will be installing a new treatment plant to remove *Cryptosporidium* from Bull Run drinking water. Until the filtration plant is online, the Portland Water Bureau will continue monitoring the Bull Run drinking water source and a range of actions to maintain public health protections. This includes informing the public of both the potential risks of *Cryptosporidium* in drinking water and Portland's plan for filtration by sharing the following information with the public on a quarterly basis.

The Portland Water Bureau does not currently treat for *Cryptosporidium* but is required to do so under drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with the Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Center for Disease Control and Prevention (CDC), people with severely weakened immune systems are at

risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water. The Portland Water Bureau and Burlington, City of Gresham, City of Sandy, City of Tualatin, Green Valley, GNR, Hideaway Hills, Lake Grove, Lorna Domestic Water, Lusted, Palatine Hill, Pleasant Home, Raleigh, Rockwood, Skyview Acres, Tualatin Valley, Two Rivers, Valley View and West Slope Water Districts receive all or part of their drinking water supply from the Bull Run. To learn if your drinking water comes from Bull Run, please contact your local water provider.

The public and the media are encouraged to view all sampling results posted to the City's website at portlandoregon.gov/water/cryptoresults. The bureau will notify the media and public immediately should further test results indicate a risk to public health and if precautions are necessary.

Customers with questions regarding water quality can call the Water Quality Line at 503-823-7525.

PWB Home Page www.portlandoregon.gov/water

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Portland Water Bureau
From forest to faucet, we deliver the best drinking water in the world.

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Information About Your Drinking Water
What You Need to Know About Cryptosporidium

Learn more about Cryptosporidium and Portland's drinking water.

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Learn About Water Quality	Reduce Exposure to Lead in Water	Learn About Cryptosporidium
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Information on Cryptosporidium Page: www.portlandoregon.gov/water/crypto

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What We Do Water Quality Information on Cryptosporidium

Cryptosporidium Monitoring Results

- Cryptosporidium Treatment
- Cryptosporidium Risk Reduction
- Cryptosporidium FAQs
- Cryptosporidium Documents
- Treatment Variance for Cryptosporidium
- Important Information About Cryptosporidium in Drinking Water
- Sign-Up for Portland Water Bureau Cryptosporidium Updates
- Historical Cryptosporidium Monitoring at the Bull Run Intake

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Information on Cryptosporidium

Drinking water treatment for *Cryptosporidium*, a potentially disease-causing microorganism, is regulated by the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2). This rule requires systems that use an unfiltered surface water source, such as the Portland Water Bureau's Bull Run, to treat for *Cryptosporidium*. LT2 also contained requirements for all systems to cover, treat or replace [uncovered finished drinking water reservoirs](#) to address possible contamination from *Cryptosporidium*, *Giardia*, and viruses.



In March 2012, based on the results of a year-long intensive sampling for *Cryptosporidium* and the limited sources and low occurrence of *Cryptosporidium* in the Bull Run Watershed, the Oregon Health Authority (OHA) issued the Portland Water Bureau [a variance](#) from the requirements to treat for *Cryptosporidium*.

In May 2017, the Portland Water Bureau was informed by OHA that the variance was being revoked as a result of a series of low-level detections of *Cryptosporidium* in January through March of 2017. The number of *Cryptosporidium* oocysts detected showed that the Portland Water Bureau was no longer able to demonstrate an equivalent level of *Cryptosporidium* from untreated Bull Run water that would be expected with treatment.

As a result, the Portland Water does not currently treat for *Cryptosporidium*, but is required to do so under the drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water. The Portland Water Bureau and Burlington, City of Gresham, City of Sandy, City of Tualatin, Green Valley, GNR, Hideaway Hills, Lake Grove, Lorna Portland Water, Lusted, Palatine Hill, Pleasant Home, Raleigh, Rockwood, Skyview Acres, Tualatin Valley, Two Rivers, Valley View and West Slope Water Districts receive all or part of their drinking water supply from Bull Run. To learn if your drinking water comes from Bull Run, please contact your local drinking water provider.

Attachment 12. E-mail sent to wholesale providers with the BCA Appendix A language for websites.

From: [Bradway, Scott](#)
To: [WB Water Providers - Water Quality Information](#); [WB Water Quality](#); [WB Public Info](#)
Subject: Cryptosporidium detected from the Bull Run intake
Date: Friday, February 8, 2019 7:44:00 AM
Attachments: [Website Language for Cryptosporidium.docx](#)

All,

We wanted to let you about the most recent *Cryptosporidium* detections. In the 50-liters sampled daily, between Sunday, Feb. 3 and Wednesday, Feb 6, two *Cryptosporidium* oocysts were detected. One oocyst was detected in the sample collected on Feb. 3 and one oocyst was detected in the sample collected on Feb. 5. *Cryptosporidium* was not detected in the samples collected on Feb. 4, or Feb. 6. Prior to these detections, *Cryptosporidium* was last detected from the Bull Run Watershed intake in a sample collected on Jan. 30. The State has determined that the public does not need to take additional protections at this time. We will continue increased sampling four times per week until we have at least three weeks without any detections.

We will be issuing a press release later today, announcing these results, and will continue to notify you and issue press releases when we have detections. We will also continue to update our website with detections as we receive validated results, these results can be found at www.portlandoregon.gov/water/cryptoresults.

Also, as a yearly reminder, and part of the requirements of the Bilateral Compliance Agreement with OHA, we strongly encourage you to post the attached information to your website, if possible.

Thank you,

Scott Bradway
Water Quality Information Program Manager
Portland Water Bureau
1120 SW 5th Ave., Room B320M
Portland, OR 97204
Phone: 503-823-1951
Fax: 503-823-9381
Email: scott.bradway@portlandoregon.gov
www.PortlandOregon.gov/water

Website Language for Cryptosporidium:

The Portland Water does not currently treat for Cryptosporidium, but is required to do so under the drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with Oregon Health Authority. In the meantime, Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. *[Insert actions customers should take, and what steps PWB is taking to correct the situation, such as:* Consultation with public health officials has concluded that at this time, customers do not need to take any additional precautions.]

Exposure to Cryptosporidium can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Center for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

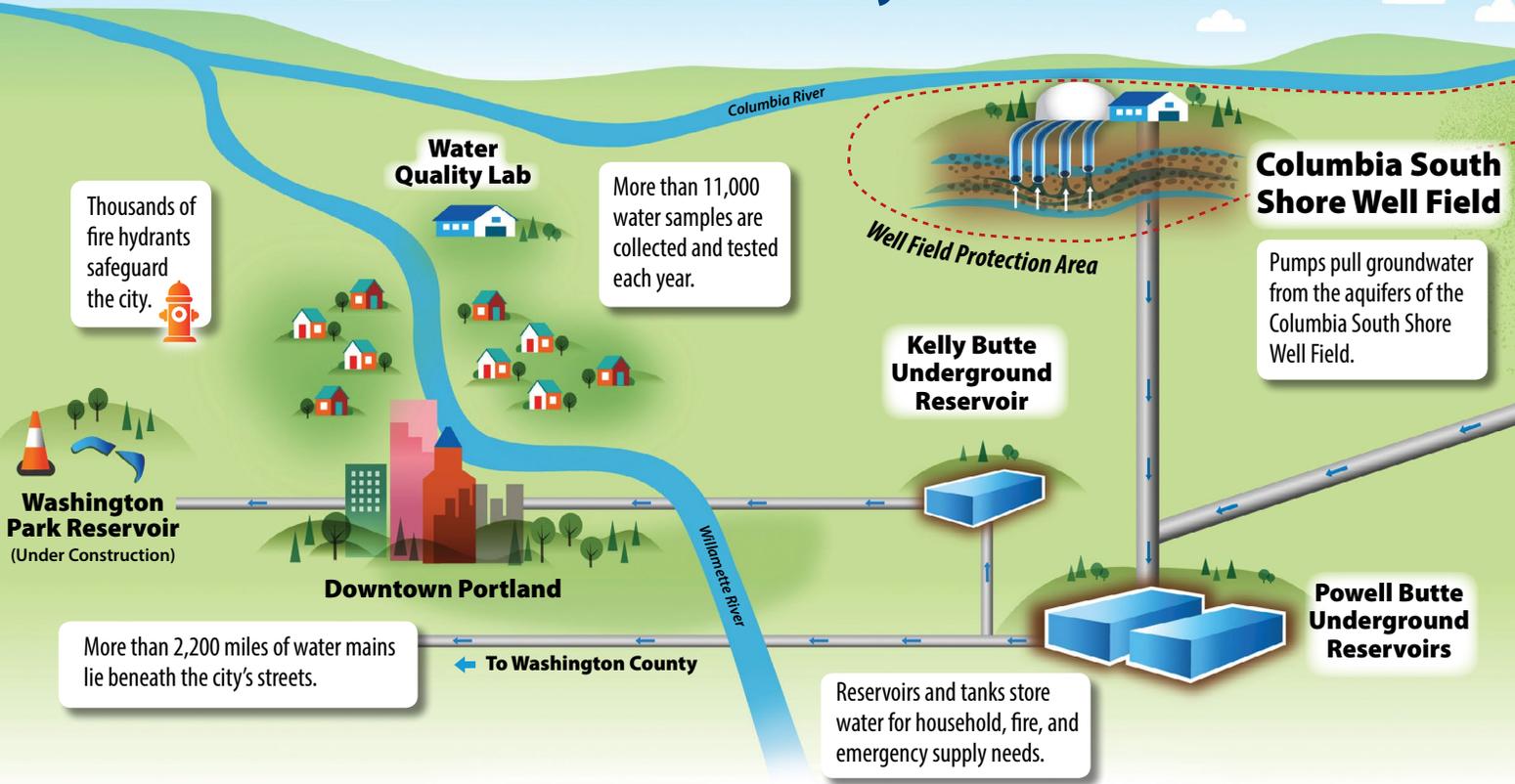
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PORTLAND WATER BUREAU
2019 Drinking Water Quality Report



Portland's Water System Established 1895



From the Commissioner

Thank you for your interest in the Portland Water Bureau's *2019 Drinking Water Quality Report*. Portlanders have two reliable and safe sources of drinking water: the Bull Run Watershed and the Columbia South Shore Well Field. Our drinking water is some of the best in the world! Your ratepayer dollars are dedicated to ensuring the delivery system is reliable, and delicious water is available to everyone - now, and for generations to come. Please read on to learn more about how the system works and the many projects underway to further protect your water resources and health.

Note: The federal Environmental Protection Agency requires specific wording for much of this Report. For more information, or if you have concerns about water quality or paying your bill, see portlandoregon.gov/water, call 503-823-7770, or contact me at Amanda@portlandoregon.gov, 503-823-3008.

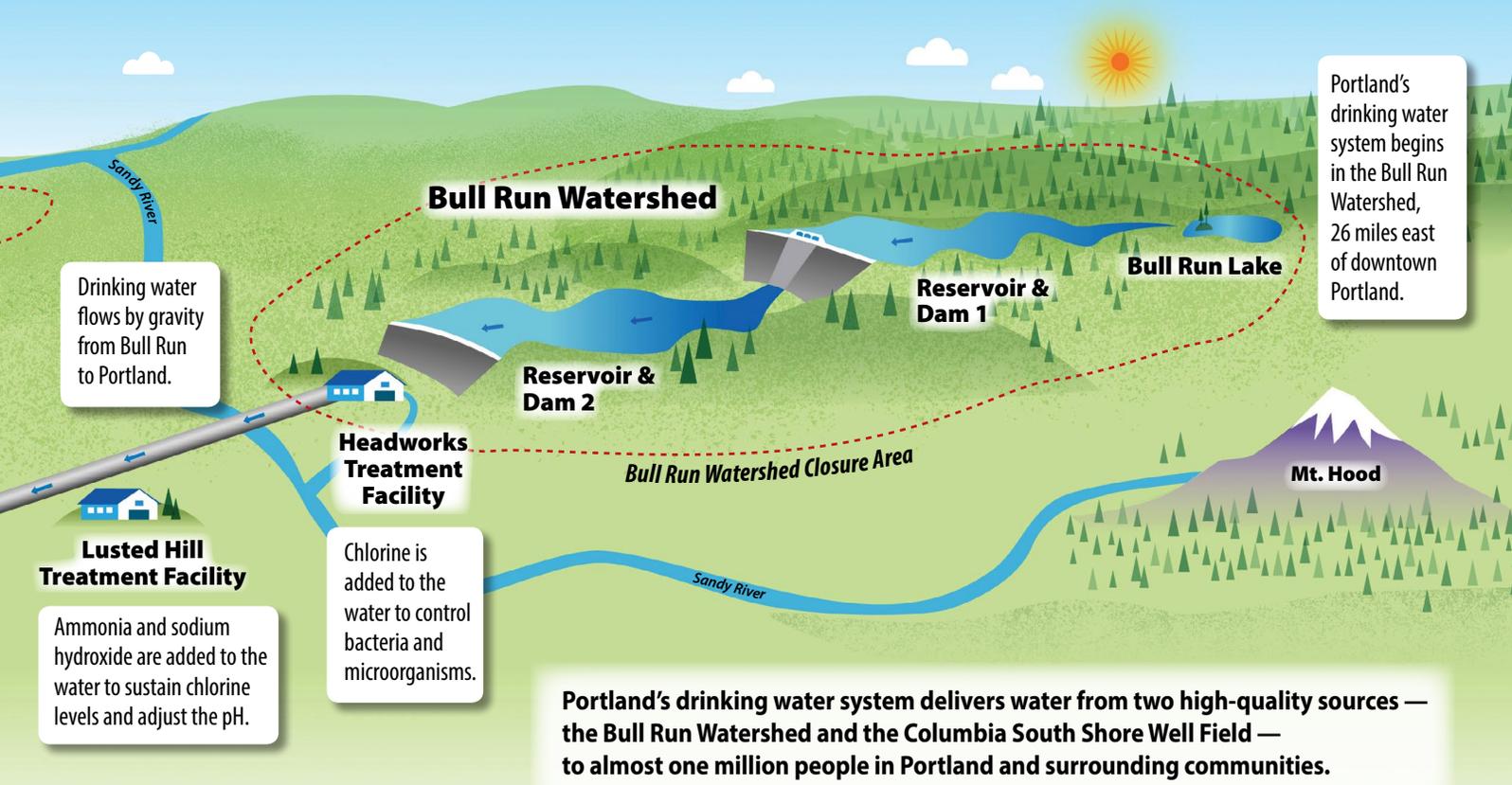
Amanda Fritz
COMMISSIONER-IN-CHARGE



From the Director

I am proud to share the *2019 Drinking Water Quality Report* with you. In this report, you will learn how the Portland Water Bureau protects, monitors and treats the water that flows from the Bull Run Watershed and the Columbia South Shore Well Field to your home, school or workplace. You will also get a glimpse of the work being done to improve our system to ensure that we can provide high-quality drinking water that meets or surpasses all drinking water standards for decades to come. Read on to learn more about the water system and how you can join us in protecting and conserving this valuable resource.

Michael Stuhr, PE
DIRECTOR



Portland's Drinking Water Sources

The Bull Run Watershed, Portland's protected surface water supply, is located in the Mt. Hood National Forest, 26 miles from Portland. The watershed is carefully managed to sustain and supply clean drinking water to a quarter of Oregon's population. In a typical year, the watershed receives an astounding 135 inches of precipitation (rain and snow), that flows into the Bull Run River and then into two reservoirs that store nearly 10 billion gallons of drinking water.

A Source Water Assessment completed in 2003 (available at portlandoregon.gov/water/sourcewaterassessment or by calling **503-823-7525**) identifies the only contaminants of concern as naturally-occurring microbes such as *Giardia*, *Cryptosporidium*, fecal coliform bacteria, and total coliform bacteria. These organisms are found in virtually all freshwater ecosystems and may be present in the Bull Run supply at low levels. The Bull Run Watershed is an unfiltered drinking water source that is currently not treated for *Cryptosporidium*. However, the Portland Water Bureau is working to install drinking water filtration by September 2027. See page 9 for more information.

The Clackamas River Water District, City of Gresham, City of Lake Oswego, City of Milwaukie, Rockwood Water People's Utility District, Sunrise Water Authority, and Tualatin Valley Water District provide drinking water to some Portland customers who live near service area boundaries. Customers who receive water from these providers will also receive detailed water quality reports about these sources in addition to this report.

The Columbia South Shore Well Field, Portland's protected groundwater supply, provides high-quality drinking water from 25 active wells located in three different aquifers. Located on the south shore of the Columbia River, the well field is the second largest drinking water source in Oregon and can produce up to 80 million gallons of water per day. The well field is used to supplement, or as an alternative to, the Bull Run supply during routine maintenance, turbidity events, emergencies, and when Portland needs additional summer supply.

In collaboration with Gresham and Fairview, the Portland Water Bureau works with businesses in the area to prevent hazardous material spills that could seep into the ground and impact groundwater. Portland also holds public events such as Aquifer Adventure, Cycle the Well Field, and Groundwater 101 to educate residents on how they can get involved. To learn more about the Well Field Protection Program or find upcoming events, visit portlandoregon.gov/water/groundwater or call **503-823-7473**.



Get email updates when we make changes to our source water or treatment. Sign up at portlandoregon.gov/water/notification

Frequently Asked Questions About Water Quality

What test results are included in this report?

The Portland Water Bureau monitors for over 200 regulated and unregulated contaminants in drinking water. All monitoring data in this report are from 2018.

If a known, health-related contaminant is not listed in this report, the Portland Water Bureau did not detect it in drinking water.

How is Portland's drinking water treated?

Currently, Portland's drinking water treatment is a three-step process. **1) Chlorine** is added for disinfection. **2) Ammonia** is added to form chloramines, which ensure that disinfection remains adequate throughout the distribution system. **3) Sodium hydroxide** is added to increase the pH of the water, reduce corrosion of plumbing materials, and control lead and copper levels when present in plumbing materials. See page 10 for more information about lead. See page 9 for upcoming treatment changes.

Is Portland's water treated by filtration?

No. Neither the groundwater nor the Bull Run source water is currently filtered. Groundwater is not required to be filtered. Since 1992, the Bull Run source has continued to meet the filtration avoidance criteria of the Surface Water Treatment Rule. However, in response to a series of *Cryptosporidium* detections in 2017, Portland is installing filtration for Bull Run by 2027. See pages 8 and 9 for more information.

Is fluoride added to Portland's drinking water?

No, fluoride is not added to the water. Fluoride is a naturally occurring trace element in surface water and groundwater. You may want to consult with your dentist about fluoride treatment to help prevent tooth decay, especially for young children.

Is Portland's water soft or hard?

Portland's water is very soft. The hardness of Bull Run water is typically 3–8 parts per million (ppm), or approximately ¼ to ½ a grain of hardness per gallon. Portland occasionally supplements the Bull Run supply with groundwater. Portland's groundwater hardness is approximately 80 ppm (about 5 grains per gallon), which is considered moderately hard.

What is the pH of Portland's water?

The pH of Portland's drinking water typically ranges between 7.5 and 8.5.

How can I get my water tested?

For free lead-in-water testing, contact the LeadLine at leadline.org or **503-988-4000**. 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, contact the Oregon Health Authority at ORELAP.Info@state.or.us or **503-693-4100**.

What causes temporary discolored water?

Since Portland's water is not filtered, sediment and organic material from the Bull Run Watershed are present in Portland's water supply. This can sometimes be seen in the fall as a harmless tea-colored tint. Sediment that has settled at the bottom of the water mains can be temporarily stirred up when the flow of water changes due to hydrant use, construction activities, firefighting, or main breaks. Corrosion of older pipes inside buildings can also cause rusty water after water has been sitting in the pipes for several hours. More information is available at portlandoregon.gov/water/discoloredwater.

Have water quality or pressure issues or concerns?

Contact the
Water Quality Line

WBWaterLine@portlandoregon.gov
503-823-7525

portlandoregon.gov/water/WQfaq



If you turned on your faucet and the water was discolored, or the flow was less than normal, would you know what to do?

Check out our
CUSTOMER GUIDE TO Water Quality and Pressure
for maintenance and troubleshooting tips.

Find it online: portlandoregon.gov/water/guide.
Call **503-823-7525** to request a paper copy.

What the EPA Says Can Be Found in Drinking Water

Across the United States, 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.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants in drinking water sources may include: **microbial contaminants**, such as viruses, bacteria, and protozoa from wildlife; **inorganic contaminants**, such as naturally-occurring salts and metals; **pesticides and herbicides**, which may come from farming, urban stormwater runoff, or home and business use; **organic chemical contaminants**, such as byproducts from industrial processes or the result of chlorine combining with naturally-occurring organic matter; and **radioactive contaminants**, such as naturally-occurring radon.

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 Environmental Protection Agency's Safe Drinking Water Hotline at **800-426-4791** or at [epa.gov/safewater](https://www.epa.gov/safewater).

Portland's New Flushing Program

New flushing crews are hitting the streets to start the ambitious task of cleaning the inside of Portland's water distribution pipes – all 2,200 miles of them! This project is part of an effort to prepare Portland's drinking water infrastructure for improved treatment and a new filtration plant in 2027. See page 9 for more information.

Across the country, water providers clean the inside of water mains by flushing water out of hydrants at high speeds. In unfiltered water systems, such as Portland's, silt and other organic material accumulates at the bottom of the water mains. This material can impact water quality and cause customers to see discolored water at the tap when it is stirred up by construction or other activities. The high-speed flushing, called unidirectional flushing, scours the insides of the pipes and removes the accumulated materials from the water mains. This routine cleaning improves the health of Portland's system now and ensures the health and integrity of the system for the future.

Typically, customers will not see an impact to their tap water while unidirectional flushing is happening in their neighborhood. However, there may be rare instances when customers report discolored water or lower pressure. If you experience either of these, contact the Water Quality Line. See page 4 for contact information.



More information: portlandoregon.gov/water/flushing

Find out where crews are flushing: portlandoregon.gov/water/WaterWorks

Contaminants Detected in 2018

Regulated Contaminant	Detected in Portland's Water		EPA Standard		Sources of Contaminant
	Minimum	Maximum	MCL or TT	MCLG	
Untreated Source Water from the Bull Run Watershed					
Turbidity (NTU)	0.19	1.01	5	N/A	Erosion of natural deposits
Fecal Coliform Bacteria (% >20 colonies/100 mL in 6 months)	Not Detected	1.64%	10%	N/A	Animal wastes
<i>Giardia</i> (#/L)	Not Detected	0.18	TT	N/A	Animal wastes

Treated Drinking Water from Bull Run Watershed and Columbia South Shore Well Field Entry Points to the Distribution System					
Arsenic (ppb)	<0.50	1.31	10	0	Found in natural deposits
Barium (ppm)	0.00074	0.01240	2	2	
Copper (ppm)	<0.00050	0.00071	N/A	1.3	
Fluoride (ppm)	<0.025	0.150	4	4	
Nitrate – Nitrogen (ppm)	<0.010	0.450	10	10	Found in natural aquifer deposits; animal wastes

Treated Drinking Water from Points throughout the Distribution System of Reservoirs, Tanks and Mains					
<i>Microbiological Contaminants</i>					
Total Coliform Bacteria (% positive per month)	Not Detected	0.74%	N/A	N/A	Found throughout the environment

<i>Disinfectant Residual</i>					
Total Chlorine Residual running annual average (ppm)	1.71	1.74	4 [MRDL]	4 [MRDLG]	Chlorine used to disinfect water
Total Chlorine Residual at any one site (ppm)	0.30	2.42	N/A	N/A	

<i>Disinfection Byproducts</i>					
Haloacetic Acids					
Running annual average at any one site (ppb)	21.3	37.7	60	N/A	Byproduct of drinking water disinfection
Single result at any one site (ppb)	11.5	51.2	N/A		
Total Trihalomethanes					
Running annual average at any one site (ppb)	23.6	37.7	80	N/A	Byproduct of drinking water disinfection
Single result at any one site (ppb)	14.2	44.5	N/A		

Unregulated Contaminant	Detected in Portland's Water			Sources of Contaminant
	Minimum	Average	Maximum	
Treated Drinking Water From Bull Run Watershed and Columbia South Shore Well Field Entry Points to the Distribution System				
Radon (pCi/L)	<50	150	300	Found in natural deposits
Sodium (ppm)	3.4	6.8	16	

For more detailed water quality analyses, view our Triannual Reports at portlandoregon.gov/water/triannual.

Definitions

MCL: Maximum Contaminant Level

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.

MCLG: Maximum Contaminant Level Goal

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.

MRDL: Maximum Residual Disinfectant Level

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.

MRDLG: Maximum Residual Disinfectant Level Goal

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 contaminants.

Notes on Contaminants

Arsenic, Barium, Copper, and Fluoride

These metals are elements found in the earth's crust. They can dissolve into water that is in contact with natural deposits. At the levels found in Portland's drinking water, they are unlikely to contribute to adverse health effects.

Fecal Coliform Bacteria

As part of Portland's compliance with the filtration avoidance criteria of the Surface Water Treatment Rule, water is tested for fecal coliform bacteria before disinfectant is added. The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. This is measured in percent of samples with more than 20 colonies in 100 milliliters of water during any six-month period. The Portland Water Bureau uses chlorine to control these bacteria.

Giardia

Wildlife in the watershed may be hosts to *Giardia*, the organism that causes giardiasis. The treatment technique (TT) is to remove 99.9 percent of the organisms. The Portland Water Bureau uses chlorine to control these organisms.

Haloacetic Acids and Total Trihalomethanes

Haloacetic acids and trihalomethanes are regulated disinfection byproducts that have been detected in Portland's water. 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. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts.

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 Portland's drinking water, nitrate is unlikely to contribute to adverse health effects.

N/A: Not Applicable

Some contaminants do not have a health-based level or goal defined by the EPA.

NTU: Nephelometric Turbidity Units

The unit of measurement of turbidity or cloudiness in water as measured by the amount of light passing through a sample.

ppm: Parts Per Million

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.

ppb: Parts Per Billion

One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2,000 years.

piC/L: Picocuries Per Liter

Picocurie is a measurement of radioactivity. One picocurie is one trillion times smaller than one curie.

TT: Treatment Technique

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

Radon

Radon is a naturally occurring radioactive gas that cannot be seen, tasted, or smelled. Radon can be detected at very low levels in the Bull Run water supply and at varying levels in Portland's groundwater supply. Based on the historical levels of radon in groundwater combined with the limited amount of groundwater used, radon is unlikely to contribute to adverse health effects. For information about radon, call the EPA's Radon Hotline (**800-SOS-RADON**) or epa.gov/radon.

Sodium

There is currently no drinking water standard for sodium. Sodium is an essential nutrient. At the levels found in drinking water, it is unlikely to contribute to adverse health effects.

Total Chlorine Residual

Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in Portland's distribution system. Chlorine residual is a low level of chlorine remaining in water and is meant to maintain disinfection through the entire distribution system.

Total Coliform Bacteria

Coliforms are bacteria that are naturally present in the environment. They are used as an indicator that other potentially-harmful bacteria may be present. If more than 5 percent of samples in a month are positive for total coliforms, an investigation must be conducted to identify and correct any possible causes. The Portland Water Bureau uses chlorine to control these bacteria.

Turbidity

Turbidity is a measure of the water's clarity. Increased turbidity is typically caused by large storms that suspend organic material in the Bull Run source water. This can interfere with disinfection and provide an environment for microbial growth. Since Bull Run water is not filtered, the treatment technique (TT) is that turbidity cannot exceed 5 NTU more than 2 times in 12 months. The Portland Water Bureau shuts down the Bull Run system and serves water from the Columbia South Shore Well Field when turbidity in the Bull Run rises.

Monitoring for *Cryptosporidium*

Drinking water treatment for *Cryptosporidium*, a potentially disease-causing microorganism, is regulated by the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2). This rule requires systems that use an unfiltered surface water source, such as the Portland Water Bureau's Bull Run, to treat for *Cryptosporidium*.

In March 2012, based on the results of a year-long intensive sampling for *Cryptosporidium* and the limited sources and low occurrence of *Cryptosporidium* in the Bull Run Watershed, the Oregon Health Authority (OHA) issued the Portland Water Bureau a variance from the requirements to treat for *Cryptosporidium*. In May 2017, the Portland Water Bureau was informed by OHA that the variance was being revoked as a result of a series of low-level detections of *Cryptosporidium* in January through March of 2017. The number of *Cryptosporidium* oocysts detected showed that the Portland Water Bureau was no longer able to demonstrate an equivalent level of *Cryptosporidium* from untreated Bull Run water that would be expected with treatment.

As a result, the Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with OHA (see page 9). In the meantime, the Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials continues to conclude that the general public does not need to take any additional precautions.

More information:
www.portlandoregon.gov/water/crypto

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water.

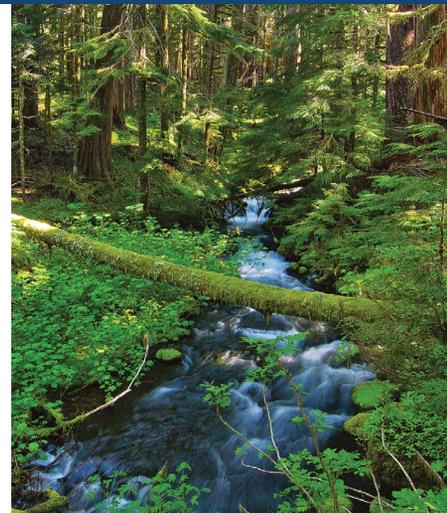
2018 Results of *Cryptosporidium* Monitoring at the Raw Water Intake

Number of Samples		Concentration Detected (oocysts/L)	
Total Tested	Positive for <i>Cryptosporidium</i>	Minimum	Maximum
271	15	Not Detected	0.09

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 people 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 (EPA)/Centers for Disease Control and Prevention (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**.



Drinking Water Treatment: Making Excellent Water Better

Portland's water treatment is adapting to changes in science, technology, and water quality. The Portland Water Bureau is working on two water treatment projects designed to keep Portland's water safe for generations to come.

1 Reducing lead levels with improved corrosion control treatment by 2022.

In Portland, the main source of lead in water is corrosion (wearing away) of household plumbing. When buildings have lead in their plumbing, lead can dissolve into the water. Improved corrosion control treatment will increase the pH of the water and add alkalinity to make lead less likely to dissolve into water. See pages 10 and 11 for more information about lead.

2 Keeping water safe with filtration by 2027.

By removing sediment, organic material, and microorganisms such as *Cryptosporidium*, Portland's future filtration plant will provide consistent, high-quality drinking water while making the water system more reliable.

Progress being made on treatment:



Explored treatment plants around the region.

Portland Water Bureau engineering and operations staff toured several treatment plants in Oregon and Washington, including Lake Oswego's filtration plant (pictured above), to learn about best practices and different filtration processes and technologies.



City Council approves recommendations.

The Bull Run Filtration team presented filtration updates and recommendations to City Council. In December, City Council authorized key elements of the filtration plant including the capacity, the location, and the type of filtration.



Listened to our customers about what is important to them.

Portland Water Bureau reached out to customers through online surveys, a Community Water Forum, and a series of information sessions to hear input from community members and answer questions about upcoming work.



Planning for which treatment option is best for Portland's water.

Portland Water Bureau project staff brought together water quality experts to discuss a range of treatment options. Water Bureau water quality engineers also began testing to evaluate which treatment processes work best for our water.



Started designing the improved corrosion control treatment facility.

Portland Water Bureau is almost halfway complete with the design of the improved corrosion control treatment facility, which will further adjust the water chemistry to reduce lead levels at customers' taps.

Reducing Exposure to Lead

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. While lead is rarely found in Portland's source waters and there are no known lead service lines in the water system, lead can be found in some homes. The Portland Water Bureau is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in homes or buildings. In Portland, lead enters drinking water from the corrosion (wearing away) of household plumbing materials containing lead. These materials include lead-based solder used to join copper pipe — commonly used in homes built or plumbed between 1970 and 1985 — and brass components and faucets installed before 2014.

If present, lead at elevated levels can cause serious health problems, especially for pregnant people and young children. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

When your water has been sitting for several hours, such as overnight or after returning from work or school, 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 drinking water, you can request a free lead-in-water test from the LeadLine. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the **LeadLine—503-988-4000** or leadline.org—or the **Safe Drinking Water Hotline—800-426-4791** or epa.gov/safewater/lead.

In Portland, the most common sources of lead exposure are lead-based paint, household dust, soil, and plumbing materials. Lead is also found in other household objects such as toys, cosmetics, pottery, and antique furniture.

Protecting Public Health

The Portland Water Bureau's Lead Hazard Reduction Program is a comprehensive approach to reduce exposure to lead. The Portland Water Bureau provides the following through this program:

- Corrosion Control Treatment**
 Reduces corrosion of lead in plumbing by adding sodium hydroxide, which increases the pH of the water. This pH adjustment has reduced lead in tap water by up to 70 percent. To further reduce lead levels, Portland has begun the process of improving corrosion control treatment. These improvements will be in place no later than 2022. See page 9 for more information.
- Lead-in-Water Testing**
 Provides free lead-in-water testing to everyone, but targets testing the water in households most at-risk from lead in water. These are homes built between 1970 and 1985.
- Education, Outreach and Testing**
 Funds agencies and organizations that provide education, outreach, and testing on all sources of lead.
- Home Lead Hazard Reduction**
 Supports the Portland Housing Bureau's Lead Hazard Control Program to provide grants to minimize lead paint hazards in homes.

Water Testing at High-Risk Residential Water Taps

Twice each year, the Portland Water Bureau tests for lead and copper in water collected from a group of over 100 homes that have lead solder and where levels are the highest. Testing results exceed the federal action level for lead when more than 10 percent of results from these homes are above 15 parts per billion. In the most recent round of testing, less than 10 percent of homes exceeded the lead action level.

Lead and Copper Testing Results from High-Risk Residential Water Taps

Regulated Contaminant	Detected in Residential Water Taps		EPA Standard		Sources of Contaminants
	Fall 2018 Results ¹	Homes Exceeding Action Level ²	Action Level ²	MCLG ³	
Lead (ppb) ³	11.9	6 out of 121 (4.96%)	15	0	Corrosion of household and commercial building plumbing systems
Copper (ppm) ³	0.216	0 out of 121 (0%)	1.3	1.3	

¹ 90th Percentile: 90 percent of the sample results were less than the values shown.

² Action Level definition: The concentration of a contaminant which, if exceeded, triggers treatment or requirements of which a water system must follow.

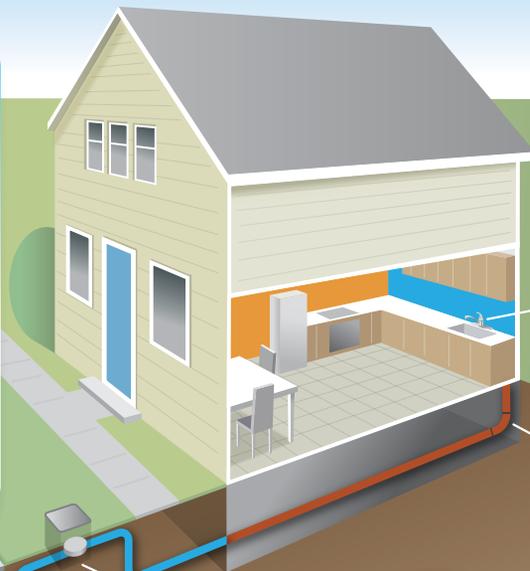
³ See page 7 for definitions.

Home Plumbing Can Add Lead to Your Drinking Water

Reduce your exposure to all sources of lead.

Contact the **LeadLine**
leadline.org
 503-988-4000

- Free lead-in-water testing
- Free childhood blood lead testing
- Free lead reduction services

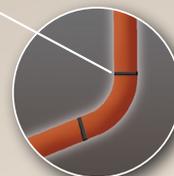


MAY CONTAIN LEAD



Faucets and Fixtures

Faucets installed before 2014 could contain leaded brass.



Lead Solder

Lead solder was commonly used to join copper pipe before 1985.



Water Main

Portland Water Bureau never used lead pipes in the water mains.

Lead Pigtails

Used prior to WWII. All known pigtail removed by 1998.

Service Lines

Portland Water Bureau never used lead pipes for the service line.

Water Meter

Portland Water Bureau has used lead-free meters since 1986. As a result, over 95% of homes have a lead-free meter.

Easy steps to reduce possible exposure to lead from household plumbing



Run your water to flush the lead out. If the water has not been used for several hours, run the tap for 30 seconds to 2 minutes or until it becomes colder before drinking and cooking. This flushes water which may contain lead from the pipes.



Use cold, fresh water for cooking and preparing baby formula. Lead dissolves more easily into hot water. Do not use water from the hot water tap for cooking, drinking, or to make baby formula.



Do not boil water to remove lead. Boiling water will not reduce lead.



Test your child for lead. Ask your physician or call the **LeadLine** to find out how to have your child tested for lead. A blood lead level test is the only way to know if your child is being exposed to lead.



Test your water for lead.

Contact the **LeadLine** to find out how to get a **FREE** lead-in-water test.



Consider using a filter.

Check whether it reduces lead—not all filters do. To protect water quality, maintain and replace a filter device in accordance with the manufacturer's instructions. For information on performance standards for water filters: nsf.org or **800-NSF-8010**.



Regularly clean your faucet aerator.

Particles containing lead from solder or household plumbing can become trapped in your faucet aerator. Regular cleaning or replacement every few months will remove these particles and reduce your exposure to lead.



Consider buying low-lead fixtures.

As of 2014, all pipes, fittings and fixtures are required to contain less than 0.25% lead. When buying new fixtures, you should seek out those with the lowest lead content.



1120 SW Fifth Avenue / Room 600
Portland, Oregon 97204

Amanda Fritz, Commissioner-in-Charge
Michael Stuhr, PE, Director

Questions? We're Here to Help

You have a range of options for contacting the Portland Water Bureau on topics from programs and projects to issues with your account and information about public meetings.

Central Information Line

8 a.m. – 5 p.m., Monday – Friday
503-823-7404

For general information about projects, programs, and public meetings.

You can also learn more on our website:
portlandoregon.gov/water

Customer Service and Financial Assistance

8 a.m. – 5 p.m., Monday – Friday
503-823-7770

PWBCustomerService@portlandoregon.gov

For questions or information about your account or to apply for financial assistance.

Water Quality Line

8:30 a.m. – 4:30 p.m., Monday – Friday
503-823-7525

WBWaterLine@portlandoregon.gov

For questions regarding water quality or water pressure.

Emergency Line

24 hours, 7 days a week
503-823-4874

For water system emergencies.

[facebook.com/portlandwaterbureau](https://www.facebook.com/portlandwaterbureau)
[@portlandwater](https://twitter.com/portlandwater)

Additional Drinking Water Information

Oregon Health Authority
Drinking Water Services: 971-673-0405
[public.health.oregon.gov/
HealthyEnvironments/DrinkingWater](http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater)

Portland Water Bureau's Water System ID: 4100657

Commissioner Amanda Fritz's Office

Amanda@portlandoregon.gov
Contact Yesenia Carrillo: 503-823-3008

Regional Water Providers Consortium

The Portland Water Bureau is a member.
Find out more at regionalh2o.org.



Para obtener una copia del informe de calidad del agua potable en español, comuníquese con:

Здесь можно получить копию отчёта о качестве воды на русском языке:

Để có bản sao báo cáo chất lượng nước uống này bằng tiếng Việt, vui lòng liên lạc:

欲索取此饮用水报告的中文版本，请联系：

portlandoregon.gov/water/wqreport
(503) 823-7525

Please contact us for translation or interpretation, or for accommodations for people with disabilities.

More information · Más información
Дополнительная информация
Thêm thông tin · 欲了解更多信息
Mai multe informații · Macluumaad dheeri ah
Подробиці · Tichikin Poraus · अधिक सूचना

portlandoregon.gov/water/access
503-823-7525 (Relay Service: 711)

Copies of this report and past reports are available at:
portlandoregon.gov/water/wqreport



Amanda Fritz, Commissioner
Michael Stuhr, P.E., Administrator
1120 SW Fifth Avenue, Room 600
Portland, Oregon 97204-1926
Information: 503-823-7404
www.portlandoregon.gov/water



Date: March 21, 2019

To: Wholesale Customers of the Portland Water Bureau

From: Scott Bradway, Water Quality Information, Portland Water Bureau

Re: 2019 Consumer Confidence Report

Please find attached, the City of Portland water quality monitoring data for 2018.

Information on purchasing copies of Portland's report is also included. We would like to remind you that the Consumer Confidence Reports (CCRs) that you purchase from the City of Portland may not, by themselves, meet your regulatory requirements per OAR 333-061-0043.

Some points to note:

- The distribution system data in Portland's CCR are unique to the City of Portland water system. Each wholesaler should provide a table of contaminants detected in their distribution system with the CCRs they send out. Portland's distribution system results would not accurately reflect another distribution system. I have deleted Portland's distribution system results to avoid any confusion.
- The Portland Water Bureau will be mailing a postcard to all customers with a website address for the report, and a phone number that customers can call to request a paper copy. We will still be printing a limited number of paper copies, and will continue to allow wholesale providers to purchase copies of our CCR.
- Nutrients, Metals and Minerals: In 2018, the PWB detected the same compounds as were detected in 2017 with the exception of lead which was not detected in Portland's source waters.
- Unregulated contaminants: PWB detected both Radon and Sodium from our source water. While they are not regulated, we are required to report these detections.
- LT2 Variance and Bull Run *Cryptosporidium* Treatment: In December of 2017, the Portland Water Bureau entered into a Bilateral Compliance Agreement (BCA) for the treatment of *Cryptosporidium*. The BCA requires PWB to include the language included in Appendix A of the BCA in the CCR, and encourage all wholesale systems to include that information in their CCR as well. Systems are also required to report any detections of *Cryptosporidium* from their source water and explain the significance of the results. I have included the monitoring results for 2018 and the prescribed language in **RED**, however we are still crafting our final *Cryptosporidium* language and additional text on upcoming treatment for *Cryptosporidium*. I will send out the final text before we go to print in early May.

Please contact us for translation or interpretation, or for accommodations for people with disabilities.

More information · Más información · Thêm thông tin · 欲了解更多信息 · Дополнительная информация

Mai multe informații · Подробности · Macluumaad dheeri ah · अधिक सूचना · Tichikin Poraus

www.portlandoregon.gov/water/access · 503-823-7432 (TTY: 503-823-6868, Relay: 711)

- Wholesalers that do not participate in the Lead in Water Education and Testing Program (LWET) to offer free lead-in-water tests for their customers should remove that language from their CCR. I have highlighted these instances in **green** to bring them to your attention. If you would like to participate in LWET and have free lead tests available for your customers, please contact me about joining this program at no cost to you or your customers.
- Not all systems participate in the Lead and Copper Rule Joint Monitoring Program, therefore the results may not apply to your system. **They have been highlighted in yellow.**
- Note that the included text, aside from the required language, is not final and may change through our internal review process. We will also be adding some additional content to the reports that is more specific to Portland's system including information on the expansion of our Unidirectional Flushing Program and other system highlights.
- In addition, water providers should include any other information required for their system per OAR 333-061-0043. This could include (but is not limited to) information on any violations during 2018, required health language, variances and contact information for the owner of the system.
- Helpful information on CCRs is available from the EPA at www.epa.gov/ccr/how-water-systems-comply-ccr-requirements and from OHA at <http://public.health.oregon.gov/healthyenvironments/drinkingwater/pages/index.aspx>.

If you have any questions regarding this information or print orders, please contact me at 503-823-1951, scott.bradway@portlandoregon.gov or contact the OHA-Drinking Water Services.

Scott Bradway
Water Quality Information Program Manager
Portland Water Bureau



Portland Water Bureau 2019 Drinking Water Quality Report

Portland Water Bureau's 2019 Drinking Water Quality Report

Portland's Water System Established 1895

Portland's drinking water system delivers water from two high-quality sources – the Bull Run Watershed and the Columbia South Shore Well Field – to almost one million people in Portland and surrounding communities.

Portland's Drinking Water Sources

The Bull Run Watershed, Portland's protected surface water supply, is located in the Mt. Hood National Forest, 26 miles from Portland. The watershed is carefully managed to sustain and supply clean drinking water to a quarter of Oregon's population. In a typical year, the watershed receives an astounding 135 inches of precipitation (rain and snow), that flows into the Bull Run River and then into two reservoirs that store nearly 10 billion gallons of drinking water.

A Source Water Assessment completed in 2003 (available at www.portlandoregon.gov/water/sourcewaterassessment or by calling **503-823-7525**) identifies the only contaminants of concern as naturally occurring microbes such as *Giardia*, *Cryptosporidium*, fecal coliform bacteria, and total coliform bacteria. These organisms are found in virtually all freshwater ecosystems and may be present in the Bull Run supply at low levels. The Bull Run Watershed is an unfiltered drinking water source that is currently not treated for *Cryptosporidium*. However, the Portland Water Bureau is working to install drinking water filtration by September 2027, see page 4 for more information.

The Columbia South Shore Well Field, Portland's protected groundwater supply, provides high-quality drinking water from 25 active wells located in three different aquifers. Located on the south shore of the Columbia River, the well field is the second largest drinking water source in Oregon, and can produce up to 80 million gallons of water per day. The well field is used to supplement, or as an alternative to, the Bull Run supply during routine maintenance, turbidity events, emergencies, and when Portland needs additional summer supply.

In collaboration with Gresham and Fairview, the Portland Water Bureau works with businesses in the area to prevent hazardous material spills that could seep into the ground and impact groundwater. Portland also holds public events such as Aquifer Adventure, Cycle the Well Field, and Groundwater 101 to educate residents on how they can get involved. To learn more about the Well Field Protection Program or find upcoming events, visit www.portlandoregon.gov/water/groundwater or call **503-823-7473**.

2019 Drinking Water Quality Report

Frequently Asked Questions About Water Quality

What test results are included in this report?

The Portland Water Bureau monitors for over 200 regulated and unregulated contaminants in drinking water. All monitoring data in this report are from 2018. **If a known, health-related contaminant is not listed in this report, the Portland Water Bureau did not detect it in drinking water.**

How is Portland's drinking water treated?

Currently, Portland's drinking water treatment is a three-step process. **Chlorine** is first added for disinfection. **Ammonia** is then added to form chloramines, which ensure that disinfection remains adequate throughout the distribution system. Finally, **sodium hydroxide** is added to increase the pH of the water, reduce corrosion of plumbing materials, and control lead and copper levels when present in plumbing materials. **See page 8 for more information about lead.**

Is Portland's water treated by filtration?

No. Neither the groundwater nor the Bull Run source water is currently filtered. Groundwater is not required to be filtered. Since 1992, the Bull Run source has continued to meet the filtration avoidance criteria of the Surface Water Treatment Rule. However, in response to a series of *Cryptosporidium* detections in 2017, Portland is installing filtration by 2027. **See page 4 for more information.**

Is fluoride added to Portland's drinking water?

No, fluoride is not added 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 Portland's water soft or hard?

Portland's water is very soft. The hardness of Bull Run water is typically 3–8 parts per million (ppm), or approximately $\frac{1}{4}$ to $\frac{1}{2}$ a grain of hardness per gallon. Portland occasionally supplements the Bull Run supply with groundwater. Portland's groundwater hardness is approximately 80 ppm (about 5 grains per gallon), which is considered moderately hard.

What is the pH of Portland's water?

The pH of Portland's drinking water typically ranges between 7.5 and 8.5.

How can I get my water tested?

For free lead-in-water testing, contact the LeadLine at www.leadline.org or 503-988-4000. 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, contact the Oregon Health Authority at ORELAP.Info@state.or.us or 503-693-4100.

What causes temporary discolored water?

Since Portland's water is not filtered, sediment and organic material from the Bull Run Watershed is present in Portland's water supply. This can sometimes be seen in the fall as a harmless tea-colored

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tint. Sediment that has settled at the bottom of the water mains can be temporarily stirred up when the flow of water changes due to hydrant use, construction activities, firefighting, or main breaks. Corrosion of older pipes inside buildings can also cause rusty water after water has been sitting in the pipes for several hours. More information is available at www.portlandoregon.gov/water/discoleoredwater.

More water quality FAQs: www.portlandoregon.gov/water/WQfaq

What the EPA Says Can Be Found in Drinking Water

Across the United States, 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.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants in drinking water sources may include: **microbial contaminants**, such as viruses, bacteria, and protozoa from wildlife; **inorganic contaminants**, such as salts and metals, which are naturally occurring; **pesticides and herbicides**, which may come from farming, urban stormwater runoff, or home and business use; **organic chemical contaminants**, such as byproducts from industrial processes or the result of chlorine combining with the naturally occurring organic matter; and **radioactive contaminants**, such as radon, which is naturally occurring.

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 Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater.

Monitoring for *Cryptosporidium*

The Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with OHA. In the meantime, the Portland Water Bureau is implementing interim measures such as watershed protection and additional monitoring to protect public health. Consultation with public health officials has concluded that, at this time, customers do not need to take any additional precautions.

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Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water.

2018 Results of *Cryptosporidium* Monitoring at the Raw Water Intake

Number of Samples	Total Volume (L)	Oocysts Detected
271	7,690	19

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 people 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 (EPA)/Centers for Disease Control and Prevention (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**.

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Contaminants Detected in 2018

Regulated Contaminant	Detected in Portland's Water		EPA Limits		Sources of Contaminant
	Minimum	Maximum	MCL or TT	MCLG	
Untreated Source Water from the Bull Run Watershed					
Turbidity (NTU)	0.19	1.01	5	N/A	Erosion of natural deposits
Fecal Coliform Bacteria (% >20 colonies/100 mL in 6 mos.)	ND	1.64%	10%	N/A	Animal wastes
<i>Giardia</i> (#/L)	ND	0.18	TT	N/A	Animal wastes
Treated Drinking Water from Bull Run Watershed and Columbia South Shore Well Field Entry Points to the Distribution System					
Arsenic (ppb)	<0.50	1.31	10	0	Found in natural deposits
Barium (ppm)	0.00074	0.01240	2	2	
Copper (ppm)	<0.00050	0.00071	N/A	1.3	
Fluoride (ppm)	<0.025	0.150	4	4	
Nitrate – Nitrogen (ppm)	<0.010	0.450	10	10	Found in natural aquifer deposits; animal wastes
Treated Drinking Water from Points throughout the Distribution System of Reservoirs, Tanks and Mains					
Microbiological Contaminants					
Total Coliform Bacteria (% positive per month)	x.xx%	x.xx %	N/A	N/A	Found throughout the environment
Disinfectant Residual					
Total Chlorine Residual running annual average (ppm)	x.xx	x.xx	4 [MRDL]	4 [MRDLG]	Chlorine used to disinfect water
Total Chlorine Residual at any one site (ppm)	x.xx	x.xx	N/A	N/A	
Disinfection Byproducts					
Haloacetic Acids					
Running annual average at any one site (ppb)	x.xx	x.xx	60	N/A	Byproduct of drinking water disinfection
Single result at any one site (ppb)	x.xx	x.xx	N/A		
Total Trihalomethanes					
Running annual average at any one site (ppb)	x.xx	x.xx	80	N/A	Byproduct of drinking water disinfection
Single result at any one site (ppb)	x.xx	x.xx	N/A		
Unregulated Contaminant					
Unregulated Contaminant	Detected in Portland's Water			Sources of Contaminant	
	Minimum	Average	Maximum		
Treated Drinking Water from Bull Run Watershed and Columbia South Shore Well Field Entry Points to the Distribution System					
Radon (pCi/L)	<50	150	300	Found in natural deposits	
Sodium (ppm)	3.4	6.8	16		

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For more detailed water quality analyses, view our Triannual Reports at www.portlandoregon.gov/water/triannual.

Definitions

MCL: Maximum Contaminant Level

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.

MCLG: Maximum Contaminant Level Goal

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.

MRDL: Maximum Residual Disinfectant Level

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.

MRDLG: Maximum Residual Disinfectant Level Goal

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 contaminants.

N/A: Not Applicable

Some contaminants do not have a health-based level or goal defined by the EPA.

NTU: Nephelometric Turbidity Units

The unit of measurement of turbidity or cloudiness in water as measured by the amount of light passing through a sample.

ppm: Parts Per Million

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.

ppb: Parts Per Billion

One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2,000 years.

piC/L: Picocuries Per Liter

Picocurie is a measurement of radioactivity. One picocurie is one trillion times smaller than one curie.

TT: Treatment Technique

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

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Notes on Contaminants

Arsenic, Barium, Copper, and Fluoride

These metals are elements found in the earth's crust. They can dissolve into water that is in contact with natural deposits. At the levels found in Portland's drinking water, they are unlikely to contribute to adverse health effects.

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 Portland's water. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts.

Fecal Coliform Bacteria

As part of Portland's compliance with the filtration avoidance criteria of the Surface Water Treatment Rule, water is tested for fecal coliform bacteria before disinfectant is added. The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. This is measured in percent of samples with more than 20 colonies in 100 milliliters of water during any six-month period. The Portland Water Bureau uses chlorine to control these bacteria.

Giardia

Wildlife in the watershed may be hosts to *Giardia*, the organism that causes giardiasis. The treatment technique (TT) is to remove 99.9 percent of the organisms. The Portland Water Bureau uses chlorine to control these organisms.

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 Portland's drinking water, nitrate is unlikely to contribute to adverse health effects.

Radon

Radon is a naturally occurring radioactive gas that cannot be seen, tasted, or smelled. Radon can be detected at very low levels in the Bull Run water supply and at varying levels in Portland's groundwater supply. Based on the historical levels of radon in groundwater combined with the limited amount of groundwater used, radon is unlikely to contribute to adverse health effects. For information about radon, call the EPA's Radon Hotline (800-SOS-RADON) or www.epa.gov/radon.

Sodium

There is currently no drinking water standard for sodium. Sodium is an essential nutrient. At the levels found in drinking water, it is unlikely to contribute to adverse health effects.

Total Chlorine Residual

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Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in Portland's distribution system. Chlorine residual is a low level of chlorine remaining in water and is designed to maintain disinfection through the entire distribution system.

Total Coliform Bacteria

Coliforms are bacteria that are naturally present in the environment. They are used as an indicator that other potentially-harmful bacteria may be present. If more than 5 percent of samples in a month are positive for total coliforms, an investigation must be conducted to identify and correct any possible causes. The Portland Water Bureau uses chlorine to control these bacteria.

Turbidity

Turbidity is a measure of the water's clarity. Increased turbidity is typically caused by large storms that suspend organic material in the Bull Run source water. This can interfere with disinfection and provide an environment for microbial growth. Since Bull Run water is not filtered, the treatment technique (TT) is that turbidity cannot exceed 5 NTU more than 2 times in 12 months. The Portland Water Bureau shuts down the Bull Run system and serves water from the Columbia South Shore Well Field when turbidity in the Bull Run rises.

Reducing Exposure to Lead

If present, lead at elevated levels can cause serious health problems, especially for pregnant people and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. While lead is rarely found in Portland's source waters and there are no known lead service lines in the water system, lead can be found in some homes. The Portland Water Bureau is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in homes or buildings. In Portland, lead enters drinking water from the corrosion (wearing away) of household plumbing materials containing lead. These materials include lead-based solder used to join copper pipe — commonly used in homes built or plumbed between 1970 and 1985 — and brass components and faucets.

When your water has been sitting for several hours, such as overnight or after returning from work or school, 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 drinking water, you can request a free lead-in-water test from the LeadLine.** Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the LeadLine, **503-988-4000**, www.leadline.org or the Safe Drinking Water Hotline **(800) 426-4791**, www.epa.gov/safewater/lead.

In Portland, the most common sources of lead exposure are lead-based paint, household dust, soil, and plumbing materials. Lead is also found in other household objects such as toys, cosmetics, and pottery.

Water Testing

Twice each year, lead and copper are tested at customers' homes that have lead solder and where levels are the highest. Testing results exceed the action level for lead when more than 10 percent of

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results from these homes are above 15 parts per billion. In the most recent round of testing, less than 10 percent of homes exceeded the lead action level.

Protecting Public Health

The Portland Water Bureau's Lead Hazard Reduction Program is a comprehensive approach to reduce exposure to lead. Through this program the Portland Water Bureau provides:

Corrosion Control Treatment Reduces corrosion of lead in plumbing by adding sodium hydroxide, which increases the pH of the water. This pH adjustment has reduced lead in tap water by up to 70 percent. To further reduce lead levels, Portland has begun the process of improving corrosion control treatment. These improvements will be in place no later than 2022.

Lead in Water Testing Provides free lead in water testing to everyone, but targets testing the water in households most at-risk from lead in water. These are homes built between 1970 and 1985.

Education, Outreach and Testing Funds agencies and organizations that provide education, outreach, and testing on all sources of lead.

Home Lead Hazard Reduction Supports the Portland Housing Bureau's Lead Hazard Control Program to provide grants to minimize lead paint hazards in homes.

Lead and Copper Sampling at High-Risk Residential Water Taps

Regulated Contaminant	Detected in Residential Water Taps		EPA Limits		Sources of Contaminant
	Fall 2018 Results	Homes Exceeding Action Level ¹	Action Level ¹	MCLG ²	
Lead (ppb) ²	11.9	6 out of 121 (4.96%)	15	0	Corrosion of household and commercial building plumbing systems
Copper (ppm) ²	0.216	0 out of 121 (0%)	1.3	1.3	

¹ Action Level definition: The concentration of a contaminant which, if exceeded, triggers treatment or requirements of which a water system must follow.

² See page 6 for definitions.

Reduce your exposure to all sources of lead.

Contact the LeadLine:

www.leadline.org

503-988-4000

- Free lead-in-water testing
- Free childhood blood lead testing
- Free lead reduction services

Easy steps to reduce possible exposure to lead from household plumbing

- **Run your water to flush the lead out.** If the water has not been used for several hours, before drinking or cooking, run the tap for 30 seconds to 2 minutes or until it becomes colder. This flushes water which may contain lead from the pipes.

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- **Use cold, fresh water for cooking and preparing baby formula.** Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.
- **Do not boil water to remove lead.** Boiling water will not reduce lead.
- **Test your child for lead.** Ask your physician or call the **LeadLine** to find out how to have your child tested for lead. A blood lead level test is the only way to know if your child is being exposed to lead.
- **Test your water for lead.** Contact the **LeadLine** to find out how to get a **FREE lead-in-water test**.
- **Consider using a filter.** Check whether it reduces lead —not all filters do. To protect water quality, maintain and replace a filter device in accordance with the manufacturer’s instructions. For information on performance standards for water filters: www.nsf.org or 800-NSF-8010.
- **Regularly clean your faucet aerator.** Particles containing lead from solder or household plumbing can become trapped in your faucet aerator. Regular cleaning every few months will remove these particles and reduce your exposure to lead.
- **Consider buying low-lead fixtures.** As of 2014, all pipes, fittings and fixtures are required to contain less than 0.25% lead. When buying new fixtures, you should seek out those with the lowest lead content.