This report informs you about the drinking water you use everyday including where it comes from, how it is treated, and any contaminants found in it. In 2012 the City of Philomath drinking water met or surpassed every public health requirement, over 120 drinking water quality standards, set by the Oregon Department of Human Services and the U.S. Environmental Protection Agency.
Note: If you are a business or multifamily dwelling, please share this report with your employees or residents.

# City of Philomath

"City of Volunteers"

## Drinking Water Quality Data from 2012

# 2013 Annual Water Quality Report

What's Inside?


2012 Water Quality Test Results

What the EPA Wants You to Know About Contaminants

Where Our Water Comes From and How It Is Treated

Water Saving Tips

## About This Report

When Congress passed the 1996 Safe Drinking Water Act amendments, the Environmental Protection Agency (EPA) was given the mandate to require public water systems to provide each customer with an Annual Water Quality Report every 12 months. This is the City of Philomath's fourteenth annual report.

The sources of drinking water, both tap and bottled, include surface sources such as rivers, streams, lakes and reservoirs, and groundwater sources, or wells. As water moves through the ground or over surfaces, it dissolves naturally occurring minerals, and in some cases, radioactive material. Water can also pick up substances resulting from the presence of human or animal activity. Contaminants that may be present in the source water include:

- *Microbial* - such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic* - salts and metals, which can occur naturally or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides* - from a variety of sources such as agriculture, stormwater runoff, and residential uses.
- *Organic chemicals* - both synthetic and volatile, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- *Radioactive* - can be naturally occurring or be the result of oil and gas production and mining activities.

To insure that tap water is safe to drink, the EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. Bottled water must meet similar standards for contaminant levels as prescribed by the Food and Drug Administration (FDA).

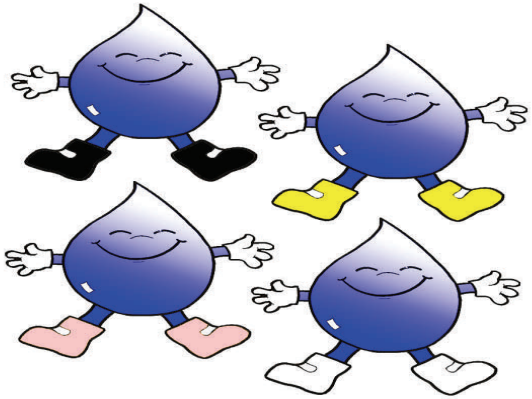
All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or by visiting the EPA website address:

## City Water Meets Highest Standards

You will be pleased to know that in 2012, Philomath drinking water met all federal and state drinking water standards. Providing our customers with a safe and reliable supply of high-quality drinking water is a primary goal of the Philomath Public Works Department. Our commitment to water quality excellence has in many cases carried us beyond state and federal requirements. This annual report is intended to provide current information about your drinking water and some of the programs and technologies that make it among the safest in the world.

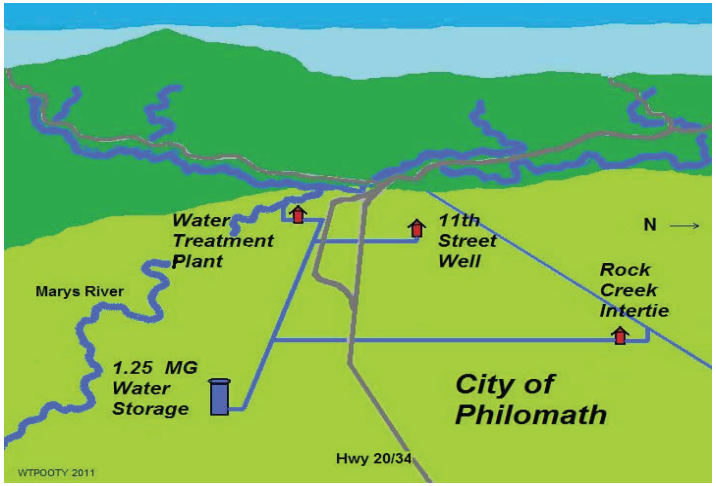
During 2012, 156.1 million gallons of drinking water were produced by the three facilities. Approximately 87% came from the treatment plant. The plant produced an annual average of just less than 0.4 million gallons each day, while the well's production accounted for 3% and use of the Intertie was 10%. Usage from the well and the Intertie depends on the time of year, customer demand, and maintenance requirements.

If after reading this report, you have questions or would like more information, please call the Public Works Department at 929-3579. The employees of the Public Works Department are dedicated to excellent customer service and value your input.



## Philomath's Water System

Total Population served: 4610




## Your Sources for Drinking Water

**Marys River**

About 90% of Philomath's drinking water comes from the Marys River. The water is pumped to the water treatment plant located on South Ninth Street.

In the first step, a chemical called alum (aluminum sulfate) is added to the "raw water". Alum makes particles like dirt and sediment in the water coagulate, or stick together. These particles clump together into larger particles called "floc". In the second step, the water enters an upflow clarifier, or primary filter. The floc particles then adhere to a synthetic media. During the third step, the water leaves the primary filter and flows through the final multi-media filter. The filters are used to remove any remaining particles in the water. A small amount of chlorine is added as it leaves the plant to kill any germs and to keep it safe in the reservoir and distribution system.

**11th Street Well**

A small portion of water from the 11th Street well is used when the plant is down for maintenance or when demand is to great for the plant to keep up. A small amount of chlorine is also added as the water is pumped from the well.

**Philomath-Corvallis Inter-tie**

In 2008 the City of Philomath and the City of Corvallis activated the Inter-tie providing Philomath with a backup source of water to help when the plant is down for repairs or maintenance.

## Definitions:

**MCLG= Maximum Contaminant Level:** 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.

**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.

**AL=Action Level**: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**TT=Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water.

**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 the 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 contamination.

**ppm=Parts per Million:** one part per million is equivalent to half on an aspirin tablet dissolved in about 50 gallons of water.

**ppb=Parts per Billion:** one part per billion is equivalent to half of an aspirin tablet dissolved in about 50,000 gallons of water.

**NTU=Nephelometric Turbidity Unit:** the standard unit of measurement used in water analysis to measure turbidity in water samples.

**pCi/L=Picocuries per liter:** billionths of a curie per liter of water, a standard to measure radiations at very low levels.

# An Explanation of the Water Quality Data Table

**The table below shows the results of our water quality analyses. Every regulated contaminant that we detected in the water, even in the most minute traces, is listed here. The table contains the name of each parameter, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the maximum reported value, the likely sources of each contaminant, footnotes explaining our findings, and a key to the units of measurement. Definitions of MCL and MCLG presented below are important. The data presented in this report is from the most recent testing done in accordance with the state and federal regulations.**

| Test | Date Tested | Unit | MCLG (MRDLG) | MCL (MRDL) | Detected Level | Range Lowest | Range Highest | Meets Regs? | Major Sources |
|---|---|---|---|---|---|---|---|---|---|
| **Inorganic** | | | | | | | | | |
| Fluoride | 2012 | ppm | 4 | 4 | Average: .59 | 0.00 | .79 | Yes | Erosion of natural deposits; water additive-promotes strong teeth |
| Sodium | 2012 | ppm | N/A | N/A | Average: 29.0 | 19.00 | 39.00 | Yes | Erosion of natural deposits |
| Nitrate | 2012 | ppm | 10 | 10 | .476 | 0.00 | 0.476 | Yes | Erosion of natural deposits; runoff from fertilizer use; leaching from septic tanks |
| Barium | 2012 | Ppm | 2.0 | 2.0 | .010 | 0.00 | .010 | Yes | Erosion of natural deposits |
| Nickel | 2010 | ppm | 0.1 | 0.1 | 0.0013 | 0.00 | 0.0013 | Yes | Erosion of natural deposits |
| Arsenic | 2009 | ppm | 0 | .010 | .00173 | 0.00 | .00173 | Yes | Erosion of natural deposits |
| Selenium | 2008 | ppm | .05 | .05 | .001 | 0.00 | .001 | Yes | Erosion of natural deposits |
| Lead | 2012 | ppb | 0 | AL=15 | 0.000 | 0.000 | 0.000 | Yes | Corrosion of household plumbing |
| Copper | 2012 | ppm | 1.3 | AL=1.3 | 0.130 | 0.012 | 0.150 | Yes | Corrosion of household plumbing |
| Gross Alpha | 2012 | pCi/L | 0 | 15 | 0.190 | 0.000 | 0.190 | Yes | Erosion of natural deposits |
| Uranium | 2012 | pCi/L | 0 | 0.03 | 0.000 | 0.000 | 0.000 | Yes | Erosion of natural deposits |
| Radium 226/228 | 2012 | pCi/L | 0 | 5 | 0.760 | 0.000 | 0.760 | Yes | Erosion of natural deposits |
| Microbiological | | | | | | | | | |
| Turbidity | 2012 | NTU | N/A | TT | Average: .06 | 0.02 | 0.32 | Yes | Soil Runoff |
| Total Coliform | 2012 | No Unit | 0 | Presence of coliform bacteria in >5% of monthly samples | One sample present for coliform out of 75 samples | 0 | 0 | Yes | Naturally present in the environment |
| Fecal coliform or E. coli Bacteria | 2012 | No Unit | 0 | 0 | 0 | 0 | 0 | Yes | Human or animal fecal waste |
| **Disinfection by-Products** | | | | | | | | | |
| Haloacetic acids | 2012 | ppb | 0.0 | 60.0 | Average: 16.00 | 9.79 | 20.20 | Yes | By-product of disinfection |
| Total Trihalomethanes | 2012 | ppb | 0.0 | 80.0 | Average: 23.98 | 9.62 | 50.7 | Yes | By-product of disinfection |
| Chlorine Residual | 2012 | ppm | 4.0 | 4.0 | Average: .90 | 0.42 | 1.23 | Yes | Remaining chlorine from disinfection |

| Additional Substances of Interest 2012 | |
|---|---|
| pH | Annual average: 7.7 mg/L |
| Alkalinity | Annual average: 28.10 mg/L |
| Arsenic | None Detected |

Although we are required to test for more than one hundred substances, including radiological, inorganic chemicals, both synthetic and volatile organic chemicals, and microbiological, only the listed substances were found - and of those found, all results are well below the required MCL.

**Radon** is a naturally-occurring radioactive gas found throughout the U.S., more often in groundwater than in surface water. The City of Philomath is not required to test for Radon.

**Cryptosporidium** is a harmful microbial pathogen found in surface water throughout the U.S. Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Cryptosporidium must be ingested to cause disease and may be spread through other means than drinking water.
The City of Philomath conducted a limited sampling for Cryptosporidium in late 2009 to 2010 before being released from further sampling by the Oregon Drinking Water program. Philomath finished with a highest mean month of .042 oocyst/L in unfiltered water taken before any treatment. There was none detected in finished water. The action level for Cryptosporidium is $\geq$ .075 oocyst/L. There is currently no required testing for Cryptosporidium unless E. coli testing exceeds action levels in 2017 when our next sampling is required.

**Escherichia coli,** known as E. coli, is a bacteria that is present in all warm blooded mammals. Birds and animals are carriers and E. coli has even been found in some fish and turtles. Sand and soil can harbor the E. coli bacteria.
The City of Philomath tested for E. coli in it's source water (Marys River) in late 2009 and 2010. While some E. coli were detected in the river water, it was below the action level. There were no E. coli or fecal bacteria detected in water samples taken throughout the city.

For the complete listing of all test results, go the Oregon Drinking Water program website: www.oregon.gov/dhs/ph/dwp/index.shtml. (Click on Data Online, then choose Data Search Options, choose the criteria you wish to view and enter Philomaths ID #00624).

## A Note for People with Special Health Concerns

Some people may be more vulnerable to contaminants in drinking water than is the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium are available from the Safe Drinking Water Hotline at 800-426-4791.

## A Word about Lead In Drinking Water.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Philomath is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. "When your water has been sitting for several hours you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

### *Why Is Chlorine Added To Our Water?*

Although three quarters of the Earth's surface is covered with water, only about 1% is available for human consumption. Often this water must be treated to make it safe for human consumption. In 1908, chlorine was first used on a large scale in the United States to disinfect water supplies. Waterborne diseases such as cholera, typhoid, and dysentery were virtually eliminated in this country. Unfortunately, more than 1.5 billion people in developing countries do not have access to safe drinking water. Diseases associated with dirty water kill more than 25,000 people each day around the world, according to the World Health Organization.

Our treatment plant and well both use chlorine to disinfect the water. Low doses of chlorine act as a disinfectant protecting you from disease causing microorganisms. We are required to add disinfectant in order to meet state and federal mandates for safe drinking water.

## *How Often Is Our Water Tested?*

Before the water reaches your tap, samples from the water treatment plant, reservoir, and at numerous locations throughout the distribution system are tested. Dozens of tests are performed at the treatment plant each day, while more than 100 drinking water tests are conducted throughout the distribution system each year. Hundreds of other required tests are performed by state certified contract laboratories that specialize in drinking water analyses. Results from all these tests are summarized and sent monthly to the Oregon Health Division for review.

## Philomath Source Water Assessment Report

In 2001 the Department of Environmental Quality (DEQ) and the Environmental Protection Agency (EPA), with the help of the City of Philomath conducted a Source Water Assessment of the Marys River watershed as required by the Federal Safe Drinking Water Act. This assessment identifies potential sources of contaminants that could impact the quality of the Marys River.

Results of the assessment reveal that the contaminants of concern include Sediments and Turbidity, microbiological agents and nutrients. Potential sources of theses contaminants include highways and railways, leaking septic systems, grazing animals, pastures, forest practices, rock quarries, lumber companies, water treatment plants, nurseries and, auto shops.

Philomath's Source Water Assessment Report is available for review at the Public Works Department or on the web at: http://www.deq.state.or.us/wq/dwp/docs/swasummary/pws00624.pdf

## Helpful Tips for Reducing Water Use:

- A lawn only needs approximately one inch of water per week to stay healthy and green. It is better to give your lawn a deep watering infrequently rather than everyday. This promotes healthy root growth.
- Make sure your irrigation system is operating efficiently.
  - Look for broken or misdirected spray heads
  - Check how much water you are applying weekly by adjusting your watering schedule.
  - Set your watering schedule for early morning or late evening to avoid water loss from evaporation.
- Consider using drip irrigation for watering.
- Plant native or drought tolerant plants that use less water once established.
- Be sure to check your toilets for leaks, even if you can't hear or see them. A leaky toilet can waste up to 100 gallons of your drinking water per day.

Cross Connection and Backflow Prevention

Congress established the Safe Drinking Water Act (SDWA) in 1974 to protect human health from contaminants in drinking water and to prevent contamination of existing groundwater supplies. This Act, and its amendments (1986 and 1996), require many actions to protect drinking water and its sources. One of these actions is the installation and maintenance of an approved backflow prevention assembly at the water service connection whenever a potential hazard is determined to exist in the customer's system. Without proper protection devices, cross-connections can occur.

What is a cross-connection?

It is a connection between your drinking water and another source of water that combines the two when a backflow condition occurs. When this condition occurs, your drinking water can become contaminated. The City of Philomath is serious about the mission to protect customers, water resources and the environment. Our objective is to monitor the implementation and annual testing of devices which will prevent the water supply from becoming contaminated, even unintentionally.

According to the State of Oregon Rules for Safe Drinking Water, all users connected directly or indirectly to a public water system must have a backflow prevention device if there is any hazard risk. Risk hazards would include, but are not limited to: Underground irrigation systems, hot tubs, wells, etc.

This backflow device must be installed and maintained at the user's expense.

All backflow prevention devices need to be tested annually by a certified tester to ensure proper working order. The City of Philomath can provide consumers or property owners with a list of certified backflow prevention testers. The consumer or property owner selects one of his/her own choosing from the list to perform the test. The consumer or property owner should maintain written records of the test and ensure that The City of Philomath has been provided with a copy. The City of Philomath is authorized to suspend water service to the consumer's premises in the event the backflow prevention device inspection and test reports are not provided as required.

You may call the City of Philomath, Public Works Dept. at 541-929-3579 with any questions about backflow prevention.

CITY OF PHILOMATH
PUBLIC WORKS DEPARTMENT
PO BOX 400
PHILOMATH, OR 97370

PRESORTED
THIRD CLASS MAIL
U.S. POSTAGE
PAID
Philomath,OR 97370
Permit No. 17

# City of Philomath
# 2013 Annual Water Quality Report

Drinking Water Quality Data from 2012

## FOR MORE INFORMATION

**United States Environmental Protection Agency**
**Safe Drinking Water Hotline**
1-800-426-4791
www.epa.gov

**Oregon Department of Human Services**
**Drinking Water Program**
1-541-726-2587
http://www.oregon.gov/DHS/ph/dwp/index.shtml
(Philomath's ID #00624)

**City of Philomath Website:**
www.ci.philomath.or.us