2014 Excellence in Communications AWARD WINNER
PNWS
IDAHO • OREGON • WASHINGTON

CITY OF RHODODENDRONS
FLORENCE • • OREGON • • 1893

City of Florence

2014

WATER QUALITY REPORT

June 2015 Edition

Letter from the Director

Mike Miller,
Public Works Director

It is our privilege and honor to present our annual water quality report. Once again, the City of Florence met all state and federal water quality standards in 2014. In addition, the City was recognized as an outstanding performer by the Oregon Health Authority, Drinking Water Services.

The outstanding performer designation is a result of the hard work and dedication of the water staff who strive to provide high quality water to residents, businesses, and visitors to the City. To be recognized as an outstanding performer, a water system must not have any contamination violations in the last five years; no more than one monitoring or reporting violations in the past three years (we had none); no significant deficiencies or rule violations during the water survey; and no waterborne disease outbreak to the water system in the last five years.

Not only is our water system an outstanding performer, but the entire Florence Public Works Department is outstanding. Public Works is more than just water production, treatment, distribution, and delivery. Our department provides water, wastewater, stormwater, streets, parks, airport, and facility maintenance to the community. It is my honor to serve as a leader of this multi-faceted department which provides the bulk of the day to day services for the City. I have tremendous respect for the staff and this report reflects their hard work.

As a water supplier, the City of Florence is required to provide an annual Consumer Confidence Report (also known as a Water Quality Report) which informs our customers of the location of our water source, the programs implemented to maintain the quality of the water, and the water analyses undertaken to ensure the water delivered to you, our customers, is safe and of the highest quality.

This edition contains information concerning the City of Florence Water System, Identification (WSID) #4100299, and covers all testing completed from January through December 2014. Florence Public Works employees are on-call 24 hours a day, 365 days a year to ensure that you always have access to safe Florence drinking water. We invite you to read this report and welcome comments. If you have any questions regarding water quality, please call us at 541-997-4106 M-F from 8AM-5PM. For after hours emergency assistance, please call the Florence Police Department at 541-997-3515.

We encourage public interest and participation in decisions affecting our drinking water. City Council meetings usually occur on the first and third Mondays of each month at 6pm at City Hall. City Hall is located at 250 Hwy 101. For information on meeting schedules and agendas contact 541-997-3437 or visit the City's website at www.ci.florence.or.us.

Your Drinking Water

We receive our water supply from the North Florence Sole Source Dunal Aquifer, designated as a "sole source" aquifer by the US Environmental Protection Agency (EPA) in 1987. It continues to be the only "sole source" aquifer in the state of Oregon. The EPA defines a sole source aquifer as "an underground water source that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas have no alternative drinking water source(s) that could physically, legally, and economically supply all those who depend upon the aquifer for drinking water." All streams, creeks, lakes, and wetlands (surface waters) in the aquifer boundary are "hydrologically connected" with the groundwater system.

In 2014, the City of Florence supplied water to approximately 8,750 consumers within the City's water service area. The water these customers received came from 12 dunal wells located just north of the City's water treatment plant at 2450 Willow Street. The well field is City-owned and consists of approximately 80 acres of carefully managed land as recommended in the City's well head protection plan. The source water assessment and aquifer protection plan is available for customer review. Please contact Public Works at 541-997-4106 for more information.

Matthew Burdett, Plant Operator II

The City of Florence water system uses two filter systems in a series to remove the iron from the raw groundwater. Three biological filters and six greensand filters comprise our filter system and these filters can treat up to three (3) million gallons of water per day (mgd). The City's supply of raw groundwater contains dissolved iron in the range of 6-9 parts per million (ppm) before treatment. The water treatment plant, located at 24th and Willow, oxidizes and removes all but 0.01 ppm through the treatment process. As water flows through the treatment plant, 90% of the iron is removed through the use of biological oxidation and filtration. Air is injected into the water to increase the level of dissolved oxygen and the naturally occurring iron bacteria assist in oxidation through various metabolic processes. The sand filters then separate the oxidized iron and bacteria from the water. The filtered water is then chlorinated to chemically oxidize the water and deactivate any residue bacteria. Potassium permanganate is added to the chlorinated water to provide additional oxidation before final filtration with greensand and anthracite coal. The color and odor of the water is removed with the iron and the final product is cool, wet, colorless, odorless, and tastes great!

Mike Unruh, Plant Operator I

For more information, or to arrange a tour of the facility, please contact Matthew Burdett or Mike Unruh at the Water Treatment Plant at 541–997-7370.

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 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. Environmental Protection Agency and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

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 Florence 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 drinking water, you may wish to 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 **1-800-426-4791, www.epa.gov/safewater/lead**.

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, call the Oregon Health Authority, Oregon Environmental Laboratory Accreditation Program at 503-693-4122.

Hardness in Water

The City of Florence water source is considered to be very soft. "Hard water" is caused by higher than ordinary levels of dissolved minerals, such as magnesium and calcium, often enhanced by carbon dioxide. Hard water does not dissolve soap readily, so making a lather for washing and cleaning is difficult. Conversely, water containing little calcium or magnesium is considered soft. City of Florence's water has a hardness of 19 ppm or 1.1 grains of hardness per gallon.

Drinking Water Fluoridation

The City of Florence has been adding fluoride to its water service since the early 1960's. Currently, fluoride is added at the EPA recommended rate of 0.7 mg/l (milligrams per liter). According to the U.S. Center for Disease Control (CDC) and the U.S. Department of Health and Human Services, widespread use of fluoride has been a major factor in the decline in the prevalence and severity of tooth decay in the United States. When used appropriately, fluoride is both safe and effective in preventing tooth decay.

Water Quality Testing

Ongoing water quality testing continues to be one of the highest priorities for the City's drinking water program in its commitment to provide premium and safe drinking water to residents. The City collects nine microbiological samples per month in addition to samples required by the Oregon Health Authority Drinking Water Program and the Environmental Protection Agency to ensure that the City's drinking water meets state and federal standards.

Test Findings

The City of Florence routinely checks, as required by the EPA, 42 Volatile Organic Compounds, 42 Synthetic Organic Chemicals, and 16 Inorganic Chemicals. The City also takes nine Bacterial Samples at multiple locations throughout the City every month. The charts on the following page show the results of our most recent testing. ***If a known health-related contaminant is not listed in this report, it was not detected in the drinking water.***

In addition, in 2014 the City tested 20 homes in representative areas throughout the City for lead and copper. We are pleased to report that none of the homes exceeded the Action Levels as determined by the EPA. For those citizens concerned about sodium levels, currently the sodium level in our water is 30.5 mg/L.

WATER QUALITY DATA

Inorganics and Bacteria

Parameter	Units	Goal MCLG	Allowed MCL	Max Detected in City's Water	Violation? Yes/No	Major Sources
Fluoride	ppm	4	4	0.70	No	Water additive which promotes strong teeth; erosion of natural deposits
Nitrate	ppm	10	10	0	No	Erosion of natural deposits
Nitrite	ppm	1	1	0	No	Erosion of natural deposits
Total Coliform	No units	0	0	0	No	Naturally present in the environment

Disinfection By-Products

Total Trihalomethanes	ppb	n/a	80	18.4	No	By-product of Chlorination
Haloacetic Acids	ppb	n/a	60	ND	No	By-product of Chlorination

Lead and Copper Sampling*

Parameter	Units	Goal MCLG	Allowed MCL — or Action Level	90th Percentile	Violation? Yes/No	Major Sources
Copper	ppm	1.3	1.3	ND	No	Corrosion of household plumbing
Lead	ppb	0	15.0	3.5	No	Corrosion of household plumbing

**Based on 90% of homes tested being at or lower than the reporting limit. For lead and copper, a water supply is in compliance with the drinking water standards if 90% of the samples are less than or equal to the Action Level.*

Unregulated and Secondary** (regulations provide advisory limits only)

Parameter	Units	Max Detected in City's Water	Major Sources
Sodium	ppm	30.5	Erosion of natural deposits, water treatment additive

***Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to help EPA determine their occurrence in drinking water and potential need for future regulation. There is currently no drinking water standard for sodium. At the levels found in drinking water, they are unlikely to contribute to adverse health effects.*

Radioactive Contaminants

Parameter	Units	Goal MCLG	Highest Level Detected in City's Water	Violation? Yes/No	Major Sources
Gross Alpha	pCi/L	15	4	No	Erosion of natural deposits
Radium Combined (226 and 228)	pCi/L	5	1.2	No	Erosion of natural deposits

Definitions

ND: None Detected

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

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Parts per Million (ppm) or **Milligrams per Liter (mg/L):** A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one million parts by weight of the water sample. 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.

Parts per Billion (ppb) or **Mircograms per Liter (µg/L):** A unit measurement describing the level of detected contaminants that is one part by weight of analyte to one billion parts by weight of the water sample. One part per billion corresponds to one penny in $10,000,000 or approximately one minute in 2,000 years.

Picocurries per Liter (pCi/L): A standard measurement of radioactivity in water.

Treatment Technique (TT): A required process intended to reduce the level of contaminant in drinking water.

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements .

Unregulated Contaminants: Water quality standards for unregulated contaminants are established as guidelines to assist public water systems in managing drinking water for aesthetic considerations such as taste, color, and odor. These contaminants do not present a risk to human health.

What the EPA Says About Drinking Water Contaminates

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline **1-800-426-4791** or at www.epa.gov/safewater.

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. Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as farming, urban stormwater runoff, and home or business use.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can occur naturally.

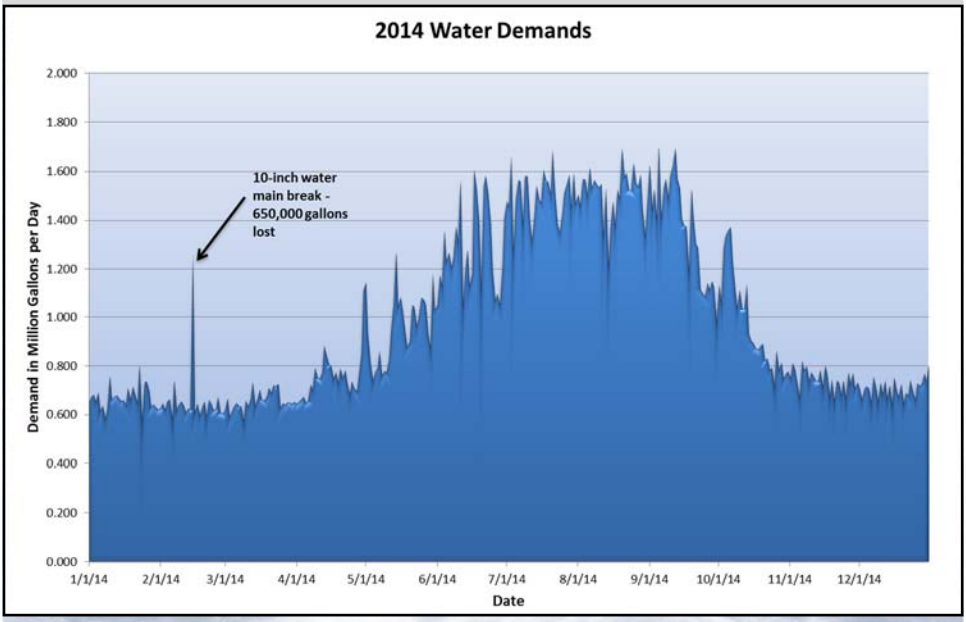
In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminates in bottled water,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

Reservoir Coating Project

During 2014, the City entered into a contract with Utility Service Co. Utility Service Co. provides an asset management approach to water tank coating systems and rehabilitation. The

photo to the left is of our 0.5 million gallon tank enclosed in plastic wrap for environmental control (humidity, wind, moisture) during the coating application process. **Photo on the right** is the finished tank showing off its bright and shiny new coating system. Additionally, the west 2.0 million gallon tank was completed in the fall of 2014 and the east 2.0 million gallon tank will be completed in June 2105. The costs to recoat a 2 million gallon tank (interior and exterior) is $375,000.

2014 Water Demands



The above chart is our system water demands for the 2014 calendar year. Of special note, on February 15, 2014, we experienced a 10-inch water main break. The average water demand prior to the water main break was 0.62 million gallons per day. The water system experienced a 1.267 million gallon day on February 15th resulting in a system water loss of 650,000 gallons. Other items of note: Our annual average water demand was 0.985 million gallons per day (MGD); our peak day demand was September 12th with 1.694 million gallons used and 1.693 million gallons used on August 20th.

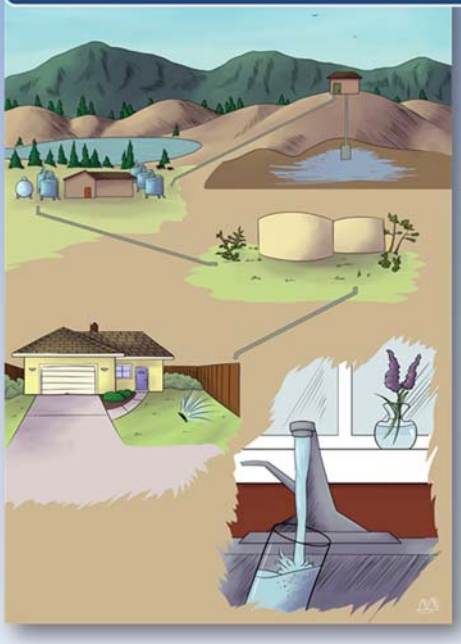
Water Conservation

The greatest demand for water occurs at the same time for all—during summer (June — September) as can be seen on our Daily Water Demand graph above. Florence's summer water use increases dramatically due to outdoor watering. By reducing water consumption at home and work, we will remain good stewards of the resources we manage. Below are some common tips to help reduce your water use:

- Look for leaks. Most leaks are easy to detect and repair. For sinks, check faucets and pipes for dripping water. For toilets, add food coloring to the tank and check the bowl in 15 minutes (don't flush). If there's color in the toilet bowl, it means there is a leak.
- Install water-saving devices. Cut water use by installing water-efficient & low flow showerheads and faucets.

When being water wise, water isn't all you save!

Source Water Protection



- 12 wells located in the North Florence Dunal Aquifer supply water to the City.
- The Water Treatment Plant treats 1-3 million gallons of water per day.
- Water is distributed to over 3,700 water connections through 62 miles of distribution pipes.
- The City of Florence can store up to 4.5 million gallons of water in our storage tanks.
- 69 inches of rain per year recharges the aquifer.

Below are some tips for how we can all help protect our water:

- Properly dispose of pharmaceuticals.
- Inspect septic systems to ensure they are working properly.
- When enjoying the dunes, remember their ecological importance. Ensure equipment is functioning properly and not leaking fluids that can seep into the groundwater.
- Always dispose of RV/Campground waste properly.
- Properly use, store, and dispose of herbicides and pesticides.
- Properly dispose of petroleum, solvents, and VOC's.
- Use car wash facilities for cleaning vehicles, RV's, and boats.
- Switch to environmentally safe household cleaning products.
- Don't put anything except water down storm drains. These drains carry storm water to our local waterways, including Munsel Creek, Siuslaw River, and the Pacific Ocean. Used motor oil, detergents, lawn fertilizers, pesticides, and other contaminants get carried by stormwater to local waterways and cause unnecessary harm.
- Utilize the Lane County Special Waste Program to dispose of hazardous wastes instead of sending it to the landfill. For information about special and hazardous waste disposal, call 541-682-4120.

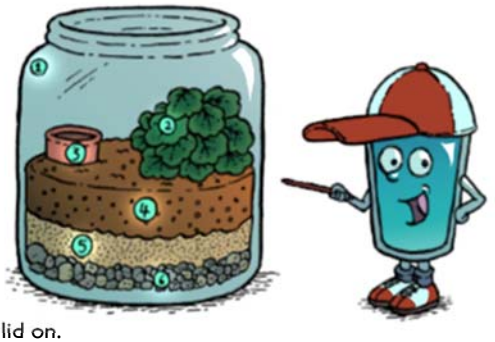
Fascinating Facts About Water!

- Only 3% of Earth's water is fresh water. The other 97% of the water on Earth is salt water.
- In just 16 hours, U.S. water utilities produce as much potable water as the oil industry produces in oil in a year.
- There is more fresh water in the atmosphere than in all of the rivers on the planet combined.
- In 1900, 25,000 Americans died of typhoid. By 1960, thanks to the use of chlorine in water treatment, that number dropped to 20.
- American residents use about 100 gallons of water per day. Florence residents use 110 gallons per day.
- Approximately 400 billion gallons of water are used in the United States per day. Florence's average for 2014 is 0.985 million gallons per day.
- Taking a bath requires up to 70 gallons of water. A five-minute shower uses only 10 to 12.5 gallons.
- A running toilet can waste up to 200 gallons of water per day.
- There are approximately one million miles of water pipeline and aqueducts in the United States and Canada, enough to circle Earth 40 times.
- Water is the only substance found on earth naturally in three forms: solid, liquid, and gas.
- More than 25% of bottled water comes from a municipal water supply, the same place that tap water comes from.

Water Cycle Activity for Kids

You will need:

1. Jar
2. Plants
3. Bottle cap or shell filled with water
4. Soil
5. Sand
6. Small Rocks



Directions:

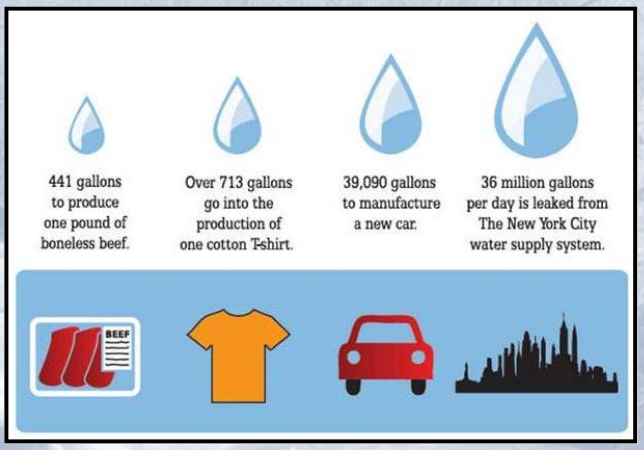
1. Fill the jar as in the picture and put the lid on.
2. Put the jar in a sunny place and see how the water cycle works.

From the United States EPA, Office of Water www.epa.gov/safewater

All About Water

One gallon of tap water costs less than 1/3 of 1 cent ($0.0033). Compare that to one gallon of:

- Bottled Water: $1.43
- Cola: $2.60
- Milk: $3.49
- Gasoline: $2.99
- Orange Juice: $7.19
- Wine: $19
- Cafe Lattes: $35
- Olive Oil: $48
- Honey: $67



(2009-2012 Prices from AWWA and NLRB)

Contact Information

City of Florence Public Works
989 Spruce St.
Florence, OR 97439
541-997-4106

Water Treatment Plant
2450 Willow St.
Florence, OR 97439
541-997-7370

The City of Florence is proud of the high quality of our water supply, which meets or exceeds all state and federal water quality requirements.

If you have any questions regarding your water quality or about information presented in this report, please call us at the Water Treatment Plant 541-997-7370 or the Public Works Department 541-997-4106 or visit our website at www.ci.florence.or.us.

This report contains important information about your community's water system. Have it translated or speak to a friend that understands it well.

Este informe contiene información muy importante. Traduscalo o hable con un amigo quien entiendalo bien.