

City of Carnation Water Quality Report for Year 2016

WHERE DOES MY WATER COME FROM?

Your water comes from one spring (primary source) located at the watershed 1 mile south of town at NE 24th Street and 344th Ave. NE; and one community well (secondary source) sunk 160 feet into an underground source of water, located at the corner of Entwistle and Milwaukee Streets. The town owns the land around the spring and the well and restricts any activity that could contaminate it. After the water comes out of the spring or well, we add disinfectant to protect you against microbial contaminants. Our Water Department staff attends training throughout each year concerning regulations and techniques for treating and distributing water to our customers. This training is vital to our commitment to you: to provide the highest quality drinking water available.

POTENTIAL HEALTH EFFECTS

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, the elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (800-426-4791).

Contaminants that may be present in source water before we treat it include:

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

Is the City of Carnation Water Department meeting other rules that govern our operations?

The state and EPA require us to test our water on a regular basis to ensure its safety. We are continually reviewing those requirements and our procedures to ensure that we serve you the highest quality drinking water. Our latest review has disclosed the following:

About Nitrate: Nitrate in drinking water at levels above 10 mg/l is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider. As a precaution we will notify physicians and health care providers in this area if there is ever a higher than normal level of nitrates in the water supply. The MCL for Nitrate is 10 mg/l. Your drinking water currently meets EPA's drinking water standard for nitrate.

About Arsenic: Most arsenic in drinking water comes from natural rock formations. Water that encounters these rock formations can dissolve arsenic and carry it into underground aquifers, streams and rivers. Your drinking water currently meets EPA's revised drinking water standard for arsenic. However, it does contain low levels of arsenic. There is a small chance that some people who drink water containing low levels of arsenic for many years could develop circulatory disease, cancer, or other health problems. Most types of cancer and circulatory diseases are due to factors other than exposure to arsenic. EPA's standard balances the current understanding of arsenic's health effects against the costs of removing arsenic from drinking water.

About Lead: In Washington State, most lead in drinking water comes primarily from materials and components used in household plumbing. The more time water has been sitting in pipes, the more dissolved metals, such as lead, it may contain. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. **To help reduce exposure to lead:** for any drinking water tap that has not been used for 6 hours or more, flush water through the tap until the water is noticeably colder before using or drinking or cooking. You can use the flushed water for watering plants, washing dishes, or general cleaning. Only use water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at <http://www.epa.gov/safewater/lead>.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. We treat our water according to EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800)426-4791, or the Washington State Department of Health, Division of Drinking Water, Northwest Region (253)395-6750.

Our City Council meets on the first and third Tuesday of each month at 7:00 pm at City Hall, 4621 Tolt Ave. Please feel free to participate in these meetings to get involved in water quality decisions.

WHAT IS MY WATER TESTED FOR AND HOW IS IT TREATED?

In 2016 we conducted more than 300 tests for over 50 drinking water contaminants. This brochure is a snapshot of the quality of the water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies. The only water treatment we provide is disinfection against microbial contaminants. For more information please call City Hall at (425) 333-4192. Technical questions about your water will be referred to Public Works Field Superintendent Bill Ferry.

W A T E R Q U A L I T Y D A T A

The table below lists all the drinking water contaminants that were required samples during the 2016 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1-December 31, 2016. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

Terms & abbreviations used below:

- 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 are no known or expected risks to health.
- Action Level (AL): The Federal Standard for the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- State Reporting Level (SRL): the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- N/A: not applicable
- ND: not detectable at testing limit
- ppb or ug/L: parts per billion or micrograms per liter
- ppm: parts per million or milligrams per liter
- pCi/l: picocuries per liter (a measure of radiation)
- mg/l: milligrams per liter

Spring Source (SO-1)

Contaminant	MCL	Carnation Water	State Reporting Level	Sample Date	Violation	Typical Source of Contaminant
Nitrate	10 mg/l	0.74 mg/l	0.50 mg/l	July 2016	NO	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.
Radium 226 (Gross Alpha)	15 pCi/L	0.205	3 pCi/L	June 2016	NO	Radium is a radionuclide formed by the decay of uranium and thorium in the environment. It occurs at low levels in virtually all rock, soil, water, plants, and animals.
Radium 228	5 pCi/L	0.309	1 pCi/L	June 2016	NO	
Volatile Organic Compounds (VOC's)	Varies	None Detected; 60 different analytes	Varies	June 2016	NO	Volatile organic compounds (VOCs) include a variety of chemicals and are emitted as gases from certain solids or liquids. Some materials include paints, aerosols, air fresheners, pesticides, building materials, furnishings and crafting materials such as adhesives and permanent markers.

Well Source (SO-2)

Contaminant	MCL	Carnation Water	State Reporting Level	Sample Date	Violation	Typical Source of Contaminant
Nitrate	10 mg/l	None Detected	0.50 mg/l	July 2016	NO	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
Radium 226 (Gross Alpha)	15 pCi/L	0.226	3 pCi/L	June 2016	NO	Radium is a radionuclide formed by the decay of uranium and thorium in the environment. It occurs at low levels in virtually all rock, soil, water, plants, and animals.
Radium 228	5 pCi/L	0.436	1 pCi/L	June 2016	NO	

Distribution System Samples – Various Locations

Analytes	MCL	Carnation water sample sites	State Reporting Level	Sample Date	Site samples found above the action level	Typical Source of Contaminant
Lead	0.015 mg/L	Site 3: 0.0016 mg/L Site 4: 0.0013 mg/L Site 5: 0.0029 mg/L All other sites None Detected	0.001 mg/L	July 2016	None	Corrosion of household plumbing systems
Copper	1.3 mg/L	0.25 mg/L average	0.02 mg/L	July 2016	None	Corrosion of household plumbing systems
Haloacetic Acid (HAA5)	60 ug/L	< 1 ug/L	6 ug/L	August 2016	None	Haloacetic acids and trihalomethanes are disinfection byproducts. Each are a family of chemicals formed when disinfectants react with naturally occurring organic matter and other substances in the source water.
Trihalomethanes (TTHM)	80 ug/L	1.6 ug/L	varies	August 2016	None	

Note: Each sample-site property owner was notified of their results by mail as part of this routine sample process.

We provide our laboratory four samples each month for microbial testing.
We had no microbial detections during 2016.

Our water is tested daily for:
pH level: average 7.0 – Neutral
Turbidity cloudiness or particle density: 0.09 ppm average Chlorine residual: 0.03 ppm average

WATER USE EFFICIENCY FOR 2016 WAS 84%
Total amount of water produced: 12,537,200 cubic feet
Total amount of water purchased or accounted for: 10,510,500 cubic feet