

# 2018 City of Benicia Consumer Confidence Report of Drinking Water Quality

In order to ensure tap water is safe to drink, the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by the public water systems.

State Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

A primary purpose of this drinking water quality report is to provide our water customers detailed information regarding where your water comes from, what it contains and how it compares to federal and state standards for the period of January 1, 2018 through December 31, 2018.

If you have any questions after reading this report please call Water Quality Technician, David Wenslawski at 707-746-4792 or the City of Benicia Water Treatment Plant at 707-746-4394.

This report and other information can be found on our website at [www.ci.benicia.ca.us/publicworks](http://www.ci.benicia.ca.us/publicworks).

The City of Benicia also encourages citizens to participate in our City Council meetings which take place on the first and third Tuesday of each month at 7:00 pm in the Council Chambers at City Hall, 250 East L Street. Council Meetings provide an opportunity to participate in decisions that affect your drinking water.

**Este informe contiene informacion muy importante sobre su agua para beber. Favor de comunicarse City of Benicia 707-746-4394 para asistirlo en espanol.**



Last year, as in years past, your tap water met all USEPA and State drinking water health standards. The City of Benicia vigilantly safeguards its water supplies and, once again, we are proud to report that our water system did not violated any maximum contaminant level or any other water quality standard.

## WATER CONSERVATION

The City of Benicia encourages it citizens to use water wisely. Rebates are available for high efficiency washing machines, turf replacement, smart irrigation controllers, pool covers, hot water recirculating components, laundry to landscape components, rain barrels and rain sensors. **Please check the website below for the current status of rebate programs.**

### SOLANO COUNTY WATER AGENCY CURRENT REBATES!

High-Efficiency Washing Machine \$100

Turf Replacement up to \$1,000

Smart Irrigation Controllers up to \$1,000

Water Conserving Products up to \$50 each

For more information go to:

[www.scwa2.com/water-conservation](http://www.scwa2.com/water-conservation)



## SOURCES OF WATER AND CONTAMINANTS

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, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and minerals, that 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, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

Our water supply consist of three surface water sources: Sacramento Delta water via the North Bay Aqueduct (NBA), Lake Berryessa transported through the Putah South Canal (PSC), and Lake Herman, the City's emergency supply.

A source water assessment of the NBA was completed in March 2003. The source is considered most vulnerable to cattle and sheep grazing activities in the watershed associated with turbidity, total organic carbon, and coliform bacteria detected in the water supply. Approximately 85% of the watershed is grazing land or irrigated pastures.

The assessment of PSC was completed in March 2003. The source is considered most vulnerable to the following activities associated with a contaminant detected in the water supply: illegal activities, unauthorized dumping, and herbicide application. In addition, PSC is considered moderately vulnerable to the following activities not associated with detected contaminants: roads, storm drain discharges, and surface water recreation.

The assessment of Lake Herman was completed in June 2002. Lake Herman is considered most vulnerable to the following activities associated with contaminants detected in the water supply: urban runoff, herbicides and pesticides used at Hiddenbrooke Golf Course and by residents and ranchers in Sky Valley, and historic mining operations.

Even though the water sources are considered vulnerable to these activities all drinking water standards are met in the treated water delivered to customers.

A copy of the completed assessment is available at the Benicia Public Library or the Water Quality Division Offices at 614 East 5th Street, or the State Water Resources Control Board, Division of Drinking Water, 850 Marina Bay Parkway, Richmond, CA. You may request that a summary be sent to you by contacting Division of Drinking Water district engineer at (510) 620-3474. You may also contact David Wenslawski, Water Quality Technician at 746-4792 or by e-mail at [dwenslawski@ci.benicia.ca.us](mailto:dwenslawski@ci.benicia.ca.us).

**Should you have any problems with your drinking water, please let us know by calling the Water Treatment Plant at 707-746-4394.**

## SPECIAL INFORMATION

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

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, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (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 (1-800-426-4791).



## CRYPTOSPORIDIUM, GIARDIA, AND TURBIDITY EXPLAINED

*Cryptosporidium* and *Giardia* are microbial pathogens found in surface water throughout the U.S. Both have been detected in our sources, the Sacramento River and Lake Berryessa, prior to our treatment process. Benicia, like many other treatment plants, provides a multiple barrier treatment process of filtering the water, then disinfecting with chlorine. Although filtration removes over 99.9% of *Cryptosporidium* and *Giardia*, even the most commonly used filtration methods cannot guarantee 100 percent removal. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* can cause Cryptosporidiosis and *Giardia* can cause Giardiasis; both are abdominal infections. Symptoms include nausea, diarrhea, and abdominal cramps. *Cryptosporidium* and *Giardia* must be ingested to cause disease, and may be spread through means other than drinking water.

Turbidity is a measure of the clarity of water. We test for turbidity because it is the best indicator of how well our filters are working. The State limit for turbidity is less than 0.3 NTUs in 95% of the samples taken. Benicia's treated water turbidity was less than 0.1 NTUs for all of 2018. Turbidity is measured in NTUs or Nephelometric Turbidity Units. The filtered water is analyzed continuously and sampled by an operator at a minimum of every four hours throughout the day.

## Lead and Copper

Lead and copper were last tested in September 2018 in 45 customer's homes. We will test again in September 2021. The EPA's Action Levels (ALs) for lead are 15 ppb and 1,300 ppb for copper. Results from the 2018 monitoring are below.

Contaminant	Action Level	PHG	Benicia's Water 90th Percentile Value	Number of Sites Above the AL	Contaminant Source
Lead (ppb)	15	2	1.6	0	Corrosion of household plumbing systems
Copper (ppb)	1,300	300	81	0	

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 material and components associated with service lines and home plumbing. The City of Benicia proactively controls the water chemistry in order to prevent lead and copper from leaching into the drinking water. We accomplish this by increasing the pH of the water to form a calcium carbonate protective liner between the pipe material and the water supply. This treatment is effective for controlling corrosion, as noted by the low lead and copper results each year.

The City replaced all of its lead service lines (installed during the early 20<sup>th</sup> century), so the only other potential sources of lead is from brass fixtures or solder joints. Because of the City's effective corrosion control program, very little lead is leached from these two plumbing materials. As of January 1, 2016, all brass plumbing fixtures must be lead-free. This assures our customers that lead contamination is a high priority with the City and that we effectively minimize its contamination into your drinking water.

If a family believes it is at risk of lead exposure from drinking water, we encourage you to have your water tested by a certified laboratory. The City has a list of certified environmental labs that can conduct this testing and the cost is reasonable. Other options available to the customer is to install a "point-of-use" treatment device (such as reverse osmosis filtration or ion exchange) at their kitchen faucet to remove lead in your drinking water supply. And finally, avoid consuming water from the hot water where there is a higher likelihood of lead leaching. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/lead>.

## Legend

**NA** - Not Applicable or not available

**ND** - Not Detected

**PHG** - Public Health Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. PHG are set by the CA EPA

**ppm**- Parts per million or milligrams per liter (mg/L)

**ppb** - Parts per billion or micrograms per liter (µg/L)

**RAA** - Running Annual Average

**NTU** - Nephelometric Turbidity Units  
The standard unit for turbidity measurements

**TT** - Treatment Technique. A required process intended to reduce the level of a contaminant in drinking water. No public health goal is defined.

**TON** - Threshold Odor Number

**PDWS** - Primary Drinking Water Standard  
MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

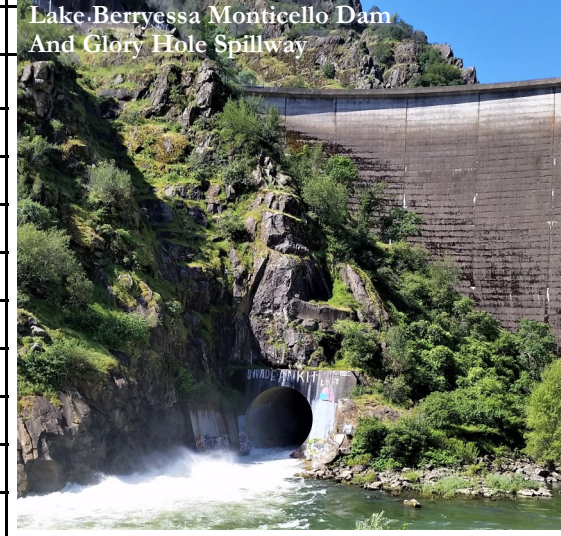
**AL** - Action Level. The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

**MCL** - Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. Set by the USEPA as close to the MCLGs as feasible.

**MCLG** - Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. Set by the USEPA.

**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 disinfectant added to water treatment 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.

PRIMARY DRINKING WATER STANDARDS							Table of Detected Contaminants for January 1, 2018 to December 31, 2018				
	Untreated Source Waters						Treated Water			CONTAMINANT SOURCE	
	North Bay Aqueduct		Lake Berryessa		Lake Herman		Benicia's Treated Water		Maximum Contaminant Levels (MCL)		Public Health Goal
CONTAMINANT	Range	Average	Range	Average	Range	Average	Range	Average			
Aluminum (ppm)	0.2 - 0.4	0.3		0.1		0.14		ND	1	0.6	Erosion of natural deposit; water treatment residue
Arsenic (ppb)	3.7 - 4.2	3.9		1.6		5.4		5.4	10	0.004	Erosion of natural deposit; orchard runoff
Fluoride (ppm)	0 - 0.3	0.1		0.082		0.3	0.05 - 1.02	0.64	2	1	Erosion; water treatment additive
Total Chromium (ppb)	5.9 - 10.3	6.6		ND		ND		ND	50	100	Erosion, discharge from steel or pulp mills, chrome plating
Hexavalent Chromium (ppb)		ND		0.033		0.078		ND	No MCL		Erosion of natural deposits, industrial discharges
Nickel (ppb)	0 - 24	14		ND		ND		ND	100	12	Erosion of natural deposits, industrial discharges
Barium (ppm)	0 - 0.04	0.023		0.06		0.059		ND	1	2	Erosion of natural deposits, industrial discharges
Lead (ppb)	0 - 8.2	2		ND		ND		ND	15	0.2	Corrosion, erosion, industrial discharges
Coliform Bacteria	Present in Source Water							ND	5% Positive	0	Naturally present in the environment
Chlorination Byproducts								RAA			
Total Trihalomethane (ppb)		ND		NA		NA	40 - 64	63	80	NA	By-product of drinking water chlorination
Total Haloacetic Acids (ppb)		NA		NA		NA	9 - 19	20	60	NA	By-product of drinking water chlorination
SECONDARY CONSUMER ACCEPTANCE STANDARDS										Notification Level	
Aluminum (ppb)	190 - 370	290		100		140		ND	200		Erosion of natural deposits; water treatment residue
Color (units)	34 - 315	141		10		25		ND	15		Naturally occurring organic materials
Iron (ppb)	417 - 1,050	694		180	180 - 200	190		ND	300		Erosion; industrial waste
Manganese (ppb)	0 - 181	58		14	15 - 16	15.5		ND	50	500	Leaching from natural deposits
Threshold Odor (units)	3 - 5	3.5		2		2		2	3		Naturally occurring organic materials
Turbidity (NTU)	4 - 12	6.8		4.3	6 - 20	14	0.02 - 0.1	0.04	TT		Soil runoff
Total Dissolved Solids (ppm)	114 - 571	259		190	320 - 399	358	149 - 407	215	1,000		Runoff/leaching from natural deposits
Conductivity (µS/cm)	189 - 958	415		340	557 - 676	619	125 - 690	360	1,600		Substances that form ions in water
Chloride (ppm)	13 - 111	40		5.8		37		14	500		Runoff/leaching of natural deposits
Sulfate (ppm)	14 - 138	45		21		46		44	500		
ADDITIONAL CONSTITUENTS ANALYZED									Notification Level		
Boron (ppb)	0 - 120	71		NA		NA		NA	1,000		
Vanadium (ppb)	0 - 5	3		NA		NA		NA	50		
Calcium (mg/l)	14 - 41	22		18	36 - 46	41		15			
Free Chlorine Residual (ppm)		NA		NA		NA	0.8 - 1.4	1.2	4.0		
Total Hardness (ppm)	68 - 221	115		180	182 - 233	206	48 - 184	103			
Magnesium (ppm)	8 - 29	15		32	24 - 27	26		10			
Potassium (ppm)	1.7 - 2.1	1.9		1.1		NA		NA			
Sodium (ppm)	11 - 32	21		10	54 - 59	57		32			
Alkalinity (ppm)	70 - 185	108		150	199 - 249	222	71 - 164	104			

### Join the Free Benicia Residential WaterSmart Program

The City of Benicia partnered with WaterSmart Software to offer residents with internet access a website with detailed information about your household water use. It's part of our commitment to provide you with the best tools to manage your water use and your water bill. We hope you take advantage of this exciting service. If you haven't already signed up, get started today by logging on to the WaterSmart web portal at [www.benicia.waterinsight.com](http://www.benicia.waterinsight.com). Questions can be emailed to [winsight@ci.benicia.ca.us](mailto:winsight@ci.benicia.ca.us)

