



# 2017 Water Quality Report

Kona Water (Kukio) District



# Table of Contents

## Your Water

Your Water System

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## 2017 Test Results

Possible Contaminants

Protecting Your Water

Individuals with Special Health Concerns

Cross-Connection Control

About Lead

Water Quality Table

Revised Total Coliform Rule (RTCR)

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## More Information

Contact Us

## About Your Water Quality

At Hawaii Water Service (Hawaii Water), our goal is to deliver safe, high-quality drinking water, 24 hours per day, seven days per week, 365 days per year. As part of that effort, we produce this annual water quality report, which includes information about where your water comes from, what it contains, and how it compares to state and federal standards.

**Most importantly, it confirms that in 2017, our water met or surpassed all standards set by the Hawaii Department of Health and U.S. Environmental Protection Agency (EPA) to protect public health.**

# Your Water System

Kona's drinking water is monitored and tested by our lab as well as an independent, certified laboratory and the Hawaii Department of Health for all contaminants established by the Safe Drinking Water Act.

Hawaii Water has been providing high-quality water utility services at the Kukio Resort since we purchased the system in December 2008 (beforehand, we were providing water utility services to our Kukio customers through an operating agreement). The needs of our customers are met by five active groundwater wells on the mauka (mountain) side of the resort. The system also includes 10 tanks that store the groundwater and one reverse-osmosis water treatment plant.

The Hawaii Department of Health's Safe Drinking Water Branch completed the preliminary draft of Kona Water's source water assessment and protection program in March 2004. For more information, please contact our Customer Center at (808) 883-2046.

For additional drinking water quality information, contact:

- **EPA Safe Drinking Water Hotline:** (800) 426-4791  
[water.epa.gov/drink/contaminants](http://water.epa.gov/drink/contaminants) or  
[water.epa.gov/drink](http://water.epa.gov/drink)
- **State of Hawaii Safe Drinking Water Branch  
Department of Health:** (808) 586-4258 or toll-free from the island of Hawaii at (808) 974-4000 ext. 64258  
[health.hawaii.gov/sdwb](http://health.hawaii.gov/sdwb)
- **Hawaii's Source Water Assessment  
and Protection Program:**  
[health.hawaii.gov/sdwb/swap](http://health.hawaii.gov/sdwb/swap)  
[www.fsa.usda.gov/Internet/FSA\\_File/hicreppeafinal.pdf](http://www.fsa.usda.gov/Internet/FSA_File/hicreppeafinal.pdf)



## Possible Contaminants

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some substances. The presence of substances does not necessarily indicate that the water poses a health risk.

**More information about substances and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.**

### PROTECTING YOUR WATER

In general, the sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, and wells. As water travels over land's surface or through the earth, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be in untreated 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, oil and gas production, mining, or farming. Pesticides and herbicides, which 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, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulates contaminants in bottled water to protect public health.

### INDIVIDUALS WITH SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to substances in drinking water than the general population. Immunocompromised people, such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, or 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. The EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological substances are available from the Safe Drinking Water Hotline at (800) 426-4791.

# Cross-Connection Control

To ensure that the high-quality water we deliver is not compromised in the distribution system, Hawaii Water is enhancing our cross-connection control program. Cross-connection control is critical to ensuring that activities on customers' properties do not affect the public water supply. Our cross-connection control staff will ensure that all of the existing backflow prevention assemblies are tested annually, assess all non-residential connections, and enforce and manage the installation of new commercial and residential assemblies.

## What You Can Do

Our customers are our first line of defense in preventing water system contamination through backflow. A minor home improvement project can create a potentially hazardous situation, so careful adherence to plumbing codes and standards will ensure the community's water supply remains safe. Please be sure to utilize the advice or services of a qualified plumbing professional.

Many water use activities involve substances that, if allowed to enter the distribution system, would be aesthetically displeasing or could present health concerns. Some of the most common cross-connections are:

- Garden hoses connected to a hose bib without a simple hose-type vacuum breaker (available at a home improvement store)
- Improperly installed toilet tank fill valves that do not have the required air gap between the valve or refill tube
- Landscape irrigation systems that do not have the proper backflow prevention assembly installed on the supply line



# About Lead

As the issue of lead in water continues to be top of mind for many Americans, Hawaii Water wants to assure you about the quality of your water.

*None of these conditions exist at Hawaii Water.* We have worked proactively to eliminate lead-bearing materials from our water systems, and we are compliant with health and safety codes mandating the installation of lead-free materials in public water systems. We test our water sources to ensure that the water we deliver to customers' meters meets water quality standards and is not corrosive toward plumbing materials.

The water we deliver may meet lead standards, but what about your home plumbing? Because lead in drinking water comes primarily from materials and components associated with service lines and home plumbing, the Lead and Copper Rule is a critical part of our water quality monitoring program.

The Lead and Copper Rule requires us to test water *inside* a representative number of homes that have plumbing most likely to contain lead and/or lead solder. This test, with other water quality testing, tells us if the water is corrosive enough to cause lead from home plumbing to leach into the water. If the "Action Level" for lead is exceeded, we work with our customers to investigate the issue and, if necessary, implement corrosion control before the lead levels create a health issue.

Elevated levels of lead, if present, 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. Hawaii Water 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 two 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](http://www.epa.gov/safewater/lead).

**In your system, results of our lead monitoring program, conducted in accordance with the Lead and Copper Rule, were 6.27 parts per billion. The EPA's Action Level for lead is 15 parts per billion.**

# Table Introduction

The 2017 Water Quality Table lists all of the contaminants that we detected in your drinking water in 2017 (except where noted).

Although the EPA requires water systems to test for up to 125 substances, we list only those substances detected in your water. The state allows us to monitor for some substances less than once per year because the concentrations of these substances do not change rapidly.

## KEY DEFINITIONS

### Maximum Contaminant Level Goal (MCLG)

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

### Maximum Contaminant Level (MCL)

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

### Action Level (AL)

Concentration of a contaminant which, if exceeded, triggers treatment or other required action by the water provider



# 2017 Water Quality Table

## Primary Drinking Water Standards

Inorganic Chemicals	Year Tested	Unit	MCL (SMCL)	MCLG	In Compliance	Range	Average	Source of Substance
Chromium, hexavalent	2017	ppb	100	100	Yes	0.21–0.89	0.6	Erosion of natural deposits
Fluoride	2017	ppm	4	4	Yes	0.32–1.0	0.7	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as nitrogen)	2017	ppm	10	10	Yes	0.47–0.87	0.7	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Disinfection Byproducts	Year Tested	Unit	MCL (SMCL)	MCLG	In Compliance	Result		Source of Substance
Total trihalomethanes	2016	ppb	80	n/a	Yes	4.8		Byproduct of drinking water chlorination
Disinfectant	Year Tested	Unit	MRDL	MRDLG	In Compliance	Range	Average	Source of Substance
Chlorine	2017	ppm	4	4	Yes	0.13–1.56	0.4	Drinking water disinfectant added for treatment
Radionuclides	Year Tested	Unit	MCL (SMCL)	MCLG	In Compliance	Range	Average	Source of Substance
Beta particle	2014	pCi/L	50 <sup>1</sup>	0	Yes	ND–11	5.5	Erosion of natural deposits

<sup>1</sup>The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

TABLE KEY			
n/a	Not applicable	ppm	Parts per million, or milligrams per liter (mg/L)
MRDL	Maximum residual disinfectant level	ppb	Parts per billion, or micrograms per liter (µg/L)
MRDLG	Maximum residual disinfectant level goal	pCi/L	Picocuries per liter (a measure of radioactivity)
ND	Not detected	SMCL	Secondary maximum contaminant level

# 2017 Water Quality Table

(Continued)

## Other Regulated Substances

Metals	Year Tested	Unit	AL	MCLG	In Compliance	90 <sup>th</sup> Percentile	Samples > AL	Source of Substance
Copper	2017	ppm	1.3	1.3	Yes	1.29	1 of 5	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	2017	ppb	15	0	Yes	6.27	0 of 5	Internal corrosion of household plumbing systems; discharge from industrial manufacturers; erosion of natural deposits

## Secondary Drinking Water Standards and Unregulated Compounds

Inorganic Chemicals	Year Tested	Unit	SMCL	MCLG	In Compliance	Range	Average	Source of Substance
Boron	2017	ppm	n/a	n/a	Yes	0.056–0.060	0.058	Erosion of natural deposits
Calcium	2017	ppm	n/a	n/a	Yes	8.7–36	22	Erosion of natural deposits
Chloride	2017	ppm	250	250	Yes	62–160	111	Erosion of natural deposits; seawater influence
Copper <sup>2</sup>	2017	ppm	1	0.3	Yes	ND–0.016	0.006	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Magnesium	2017	ppm	n/a	n/a	Yes	26–100	63	Erosion of natural deposits
Molybdenum	2017	ppm	n/a	n/a	Yes	ND–0.005	0.003	Erosion of natural deposits
Silica	2017	ppm	n/a	n/a	Yes	32–79	56	Erosion of natural deposits
Sodium	2014	ppm	n/a	n/a	Yes	43–101	72	Erosion of natural deposits; seawater influence
Strontium	2017	ppm	n/a	n/a	Yes	0.023–0.096	0.060	Erosion of natural deposits
Sulfate	2017	ppm	250	250	Yes	29–144	84	Runoff/leaching from natural deposits; industrial wastes
Vanadium	2017	ppm	n/a	n/a	Yes	22–99	61	Erosion of natural deposits; manufacturing of alloys and steel
Zinc	2014	ppm	5	5	Yes	ND–0.025	0.013	Runoff/leaching from natural deposits; industrial wastes

<sup>2</sup>Samples collected at entry points to the distribution system.

# Revised Total Coliform Rule (RTCR)

Effective April 1, 2016, the Revised Total Coliform Rule (RTCR) replaced the Total Coliform Rule that had been in place for public water systems since 1989. The purpose of the revised rule remains the same as the original rule, to protect public health by ensuring the integrity of the drinking water distribution system and by monitoring for the presence of microorganisms (i.e., total coliform and E. coli bacteria).

Under the RTCR, the presence of total coliform bacteria (E. coli absent) is no longer considered a direct health threat. The maximum contaminant level (MCL) for total coliforms has been eliminated. The presence of total coliform bacteria does, however, indicate that a pathway exists, or may exist, for contamination into the distribution system. The U.S. EPA anticipates even greater public health protection under the revised rule because it requires water systems to identify and fix problems that may directly or indirectly contribute to microbial contamination. It formalizes the process, requiring a qualified person to conduct a Level 1 Assessment (see definitions at right) when the system has greater than one routine coliform-positive sample in a calendar month. Any sanitary defects that are identified during the assessment must be corrected. Examples of ways that coliform can enter the system are: failure to disinfect properly after maintenance or repairs, main breaks, holes/gaps in storage tank joints and screens, loss of system pressure, cross connections, biofilm accumulation in the distribution system, inadequate disinfectant residual (chlorinated systems) or sampling protocol errors.

The assessor records their findings and corrective actions onto an assessment form. The completed form must be submitted to the Hawaii State Department of Health (DOH) within 30 days of the treatment technique trigger (TTT), the new RTCR term for greater than one routine coliform-positive sample in a calendar month. A second TTT in a rolling 12-month period results in a more comprehensive Level 2 Assessment. A third TTT will likely result in DOH requiring permanent continuous chlorination (if the system is not already chlorinated).

**Level 1 Assessment:** a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment:** a very detailed study of the water system to identify potential problems and determine (if possible) why total bacteria have been found in our water system more than once in a 12-month period, or why an E. coli MCL violation has occurred (if applicable).

For a helpful brochure on the RTCR from the Department of Health, please visit this address: <http://health.hawaii.gov/sdwb/files/2016/03/RTCR-Factsheets-Monitoring-1.pdf>

# thank you.

If you have questions, comments, or concerns regarding your drinking water, please contact Hawaii Water Service. We welcome your interest in Kukio's water system.

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