



June 10, 2014

Dear KIU Customer,

Kiawah Island Utility, Inc. (System 1010008) is providing this Annual Drinking Water Report for the period of 1/1/13–12/31/13 as required by The Safe Drinking Water Act. Attached you will find a summary of our analytical results showing no violations of contaminant levels.

All of the potable water used on Kiawah Island comes from Charleston Water System (CWS) by way of our supplier, St. Johns Water Company. The source of our water is surface water from the Edisto River and Bushy Park Reservoir that has been treated prior to pumping it nearly 45 miles for use on Kiawah Island. Neither St. Johns nor Kiawah treat the water in any way that significantly alters its composition; therefore, we have included a copy of the 2013 CWS report for your review. We hope this will be not only informative but useful as well.

Although we continue to see regulation changes requiring more and more resources, we maintain our commitment to provide high quality water that exceeds standards established by The Safe Drinking Water Act. The SC Department of Health and Environmental Control lists potential sources of contaminants for all water supplies. It is easy to get more information about ways in which our state offers protection, just go to The Source Water Assessment and Protection Program (SWAP) for South Carolina at www.scdhec.net/water/html/srcwtr.html.

We are hopeful that you will take the time to review this report and will remain confident that your utility staff is working to ensure that you receive the highest quality and quantity of water to meet your needs. If you need additional information please do not hesitate to contact me at (843) 768-0641 or by email at bdennis@kiawah.com. If you require consumer service information, please contact the S.C. Office of Regulatory Staff by phone at (803) 737-5230 or online at www.regulatorystaff.sc.gov.

Sincerely,

A handwritten signature in blue ink that reads "Becky J. Dennis". The signature is fluid and cursive.

Becky J. Dennis
General Manager

Meter Reading

KIU staff reads the water meters for each account once per month. The readings on those specific days are reflective of the prior 28–35 days of usage. The meter readers are sensitive to the usage patterns and note the meter cards when there is a reading greater than normal. As a courtesy, they check the area around the home for evidence of a broken pipe or other contributory factors for the usage. If the meter is running and the usage is higher than normal, they alert the office staff to make contact with the owner to arrange for corrective action.

Remember, it is nearly impossible to go back and try to reconstruct what might have happened to cause the excessive usage. Some examples of what we have seen over the years are:

- **Toilet floats and flappers hung up**

At ½ gallon per minute you will use 21,600 gallons in a month

- **Toilet tank “silent leaks”**

This occurs when the water level overflows gently (without the sound of a toilet running) this can account for 1,000 per day or 30,000 per month.

- **Icemakers malfunctioning – valve stuck open**

Can account for 2 gallons per minute or 86,400 gallons per month.

- **Pool and fountain fill valves hung up**

Can account for 5 gallons per minute or 216,000 gallons per month

- **Irrigation heads broken or damaged**

At 3 gallons per minute you will use 129,300 gallons per month

- **Irrigation controllers faulting out**

Depending on where it defaults you could see usage in excess of 100,000 gallons in a month

- **Drip system controls faulting out**

1 gallon per minute = 43,200 gallons per month

- **Outside spigots leaking or left on**

At 15 gallons per minute you will use 5,400 in a 24 hour period

It is prudent for the owner to ensure that KIU has current contact information. This should include home and cell numbers, as well as email, and/or the name and number of someone with access to the property in the event of an emergency.

Many times KIU staff has tried to make contact with an owner using the information on record only to find that the number is no longer in service. KIU attempts to find an alternate contact number but in many cases is unsuccessful. We then are at the mercy of the owner making contact with us. At times, when the owner receives or reviews their statement they then call the utility office upset that contact was not made. This can become an uncomfortable situation for both parties.

KIU recognizes that many of their customers are not permanent residents and therefore they go the extra mile to try to identify problems as early as possible. As stated above though, KIU is only at the property once a month so having someone you trust conducting periodic checks may be helpful.

KIU will generally not turn the water off to a home without the owner's consent if the meter is running because of the various water-reliant systems possible within a home.





Ways to protect your property and control your water consumption

- **Inspect, repair, or replace faulty valves both inside and out**
- **Know where your house isolation valve is located**
 - If you can't locate your valve, have one installed before you need it
 - KIU recommends that you install an isolation valve near your water meter to allow your entire service line to be secured in the event of a break or emergency
- **Inspect your faucets for leaks; if they are dripping or will not shut off completely you are wasting water**
- **Inspect your irrigation system**
 - Make certain your controller is working properly
 - Run through each cycle to ensure there are no damaged heads
 - Make certain your backflow device is working properly
 - » If damage occurs in your irrigation system this will be the quickest means of isolating the water flow going to waste
 - Install a rain gauge or other mechanisms that shut your system off in rain events
 - Spend time and ask questions of your irrigation technician to gain a better understanding of the watering requirements during the seasons
- **Provide Kiawah Island Utility, Inc. up to date contact information for you and a local emergency contact if one is available. Please remember to call us when your numbers and email addresses have changed.**



Kiawah Island Utility, Inc. 2013 Water Quality Table

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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Some people may be more vulnerable than the general population to contaminants in drinking water.

Parameter	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites over AL	Units	Violation	Possible Sources of Contamination
Copper	2012	1.3	1.3	0.12	0	ppm	N	Erosion of natural deposits; leaching from wood preservatives, corrosion of household plumbing systems
Lead	2012	0	15	0	0	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits
Parameter	Date Sampled	MCGL	Highest Level Detected	Range	MCL	Unit	Violation	Possible Source in Water
Total Coliform Bacteria	2013	0%	0%	0%	Presence of coliform bacteria <5% of monthly samples	% positive samples	N	Naturally present in the environment
Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	2013	3	3 - 3	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes
Haloacetic Acids HAA5	2013	23	10 - 45	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes TTHM	2013	21	8.67 - 31.66	No goal for the total	80	ppb	N	By-product of drinking water disinfection

Table of Definitions

MCLG—Maximum Contaminant Level Goal: 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.

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 contaminants.

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.

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

ppm: Parts per million or milligrams per liter (one ounce in 7,350 gallons of water)

ppb: Parts per billion or micrograms per liter (one ounce in 7,350,000 gallons of water)

N: None

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

gr/gal: Grains per gallon



2013 Water Quality Report

May 2014



Charleston
Water System

Photo by Charleston Water System associate Eric Griffin of his daughter enjoying tap water.

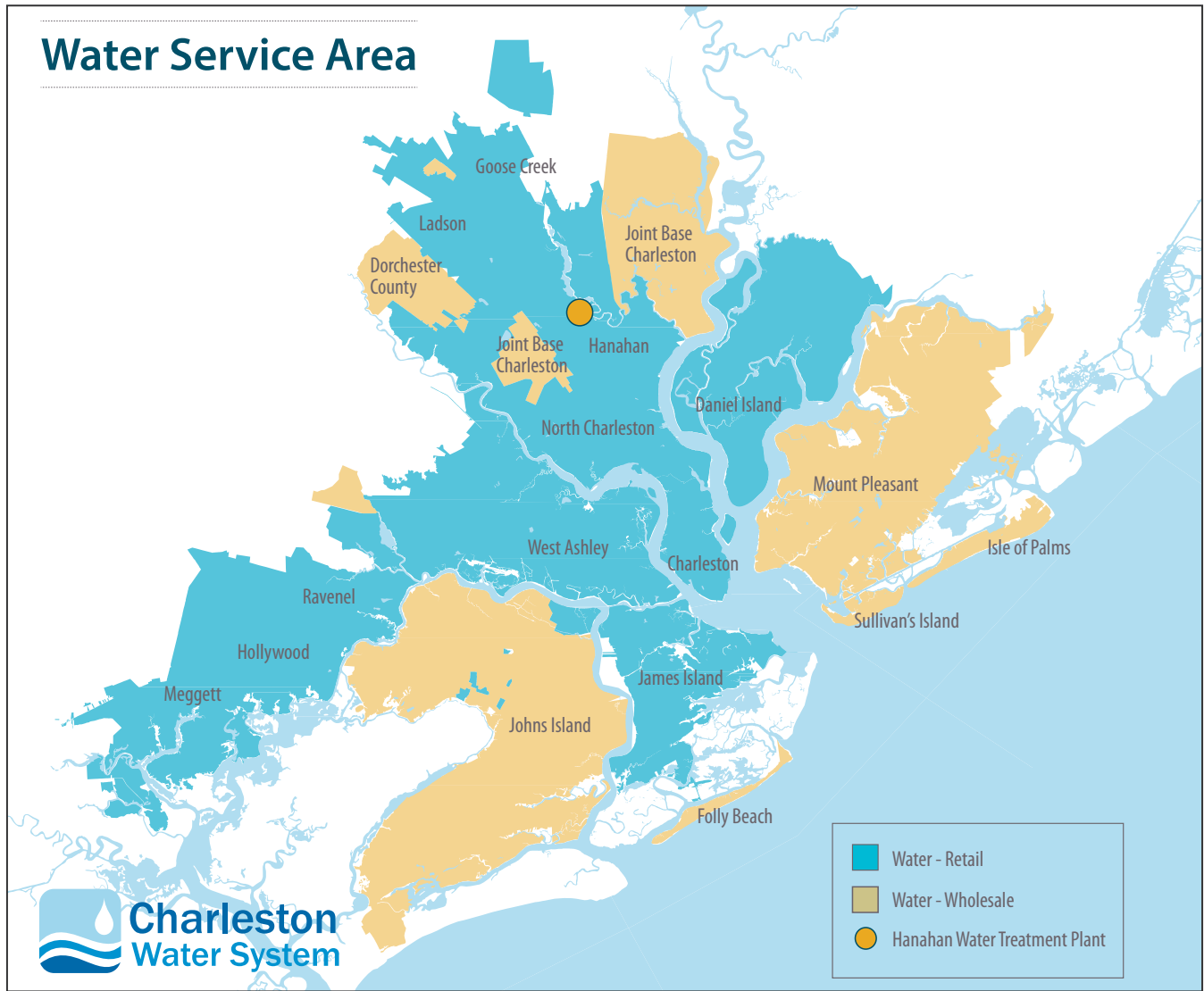
About Charleston Water System

Charleston Water System is a publicly owned water and wastewater utility. We provide clean drinking water to more than 400,000 people in the Greater Charleston area, including direct retail service to 110,000 accounts and wholesale water service to neighboring utilities and municipalities.

Our legal name is the *Commissioners of Public Works of the City of Charleston*, but we do business using the name *Charleston Water System*. Our public water system identification number is 1010001.

Our Mission is to protect public health and the environment of our service community by providing clean water services of exceptional quality and value.

Our Vision is to become by the year 2017, our 100th anniversary, an organization worthy of the Malcolm Baldrige National Quality Award for our customers, our community, and our future.



About This Report

This report is produced annually and posted on our web site by June 1st. For more information, or to request hard copies, call us at (843) 727-6800, email customerservice@charlestoncpw.com, or visit one of our office locations:

Downtown
103 St. Philip Street

North Charleston
6296 Rivers Avenue

Get Involved

Charleston Water System is governed by a board of elected Commissioners, which meets monthly. These meetings are open to the public, and citizen participation is welcomed. Meetings are typically held the fourth Tuesday of every month at 9 a.m. at 103 St. Philip Street. For more information, visit www.charlestonwater.com.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

Possible Contaminants in Source Water

The sources of drinking water—for both tap water and bottled water—include rivers, lakes, streams, ponds, reservoirs, springs, and wells.

As water travels over the surface of land and into waterways, it dissolves naturally occurring minerals and can pick up substances from the presence of animals or human activity. Contaminants that may be present in source water include:

Biological compounds, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife.

Inorganic compounds, such as salts and metals, which can be naturally occurring or the result of storm water 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, runoff, and residential uses.

Organic compounds, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, can also come from gas stations, runoff, and septic systems.

Radioactive compounds, which can be naturally occurring or be the result of oil and gas production and mining activities. To protect public health, water treatment plants remove these contaminants to safe levels established by regulations.

Source Water Protection

To raise awareness about the importance of preventing water pollution, the SC Department of Health and Environmental Control (SCDHEC) has identified the potential sources of contamination for each drinking water source in the state. You can view the source water assessment report for Charleston Water System on SCDHEC's web site at www.scdhec.gov/environment/water/srcwtr.htm.

How You Can Help

- Pick up the poop! Pet waste pollutes waterways with bacteria and excess nutrients.
- Don't over-fertilize your lawn. Excess fertilizers and pesticides wash into storm drains and pollute streams.
- Never pour anything into a storm drain. Storm drains collect rain water and empty directly into a waterway.

Tap Water Regulations

Charleston Water System meets or surpasses all drinking water standards and regulations established by the US Environmental Protection Agency (USEPA) and SCDHEC.

These regulations protect public health by setting legal limits on levels of potentially harmful contaminants in drinking water. 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 at 1-800-426-4791.

Descriptions of the compounds detected in Charleston's water and the EPA limits for each compound are listed in the table on the next page.

A Message from the US Environmental Protection Agency

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as persons with HIV/AIDS or other immune system disorders, persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, some elderly and some infants can be particularly at risk from infections.

These people should seek advice from their health care providers. EPA/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).



Settling basins at the Hanahan Water Treatment Plant.

Where Your Water Comes From

Charleston Water System’s drinking water comes from two surface water sources: The Bushy Park Reservoir in Berkeley County (our primary source) and the Edisto River in Dorchester County. Deep tunnels carry water from these sources to our Hanahan Water Treatment Plant. Together, these sources provide a plentiful supply of water, even during a severe drought.



Installing a new water main in downtown Charleston.

The Treatment Process

At the treatment plant, the water goes through several processes to make it clean and safe to drink.

First, food-grade alum is mixed into the water. This causes tiny suspended particles to clump together and form heavier particles called floc. When the water flows into sedimentation basins, the floc sinks to the bottom and is removed.

Next, the water flows through filters, which remove microscopic contaminants such as bacteria and microorganism.

Finally, the water is disinfected to protect against disease-causing organisms, and the fluoride level is adjusted to protect dental health.

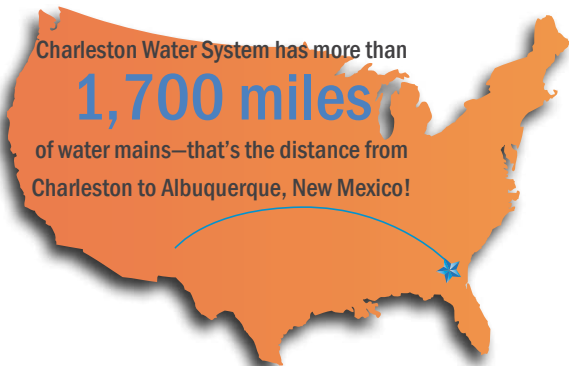
Charleston Water System is a member of the Partnership for Safe Water, a voluntary program for utilities that are committed to treating drinking water beyond what is required by law.



Water Distribution

After treatment, the clean water is pumped into the water distribution system, a network of nearly 2,000 miles of underground pipes ranging in size from one inch to four feet in diameter.

The distribution system includes dozens of pumps, four storages tanks, and some 9,000 fire hydrants. All of this must be monitored and maintained to provide high quality water at the right pressure to the 110,000 homes and businesses served by Charleston Water System.



2013 Water Quality Results

Charleston Water System met or surpassed all water quality requirements in 2013

Charleston Water System’s drinking water was tested more than 20,000 times for 150 substances and parameters in 2013. Of these, only those listed in the table below under the heading *Detected in Our Water* were found in our water, and all were

detected at levels below the regulatory limit. In addition to the detected substances, we are required to report the results for certain contaminants, such as *Cryptosporidium* and *Giardia*, even when none are detected.

Our water was tested more times and met or exceeded all quality standards in 2013. summary of lab test

	Constituent	Maximum Contaminant Level (MCL) set by EPA	Maximum Contaminant Level Goal (MCLG)	Actual Level in Charleston’s Water for 2013
Required Reporting				
	Turbidity A measure of the amount of suspended particles in the water (cloudiness); an indicator of overall water quality and filtration effectiveness.	Requires a specific treatment technique (TT); 95% of monthly samples must be less than 0.3 NTU	N/A	0.15 NTU highest level detected 100% of monthly samples met the limit
	Cryptosporidium A parasite spread through human and animal waste that causes gastrointestinal illness.	No MCL; EPA requires specific treatment techniques (TT)	Zero <i>Cryptosporidium</i> oocysts per 1 liter of water	Zero <i>Cryptosporidium</i> oocysts per 1 liter of water
	Giardia A parasite spread through human and animal waste that causes gastrointestinal illness.	No MCL; EPA requires specific treatment techniques (TT)	Zero <i>Giardia</i> cysts per 1 liter of water	Zero <i>Giardia</i> cysts per 1 liter of water
Detected in Our Water				
Inorganic Compounds	Copper A metal widely used in household plumbing that may corrode into water.	90th percentile of all samples collected must be less than the 1.3 ppm action level (AL)	1.3 ppm	0.11 ppm* (no samples exceeded the action level) Range: 0 to 0.11 ppm
	Lead A metal no longer used in water pipes, but may be present in plumbing fixtures or old pipes; may corrode into water.	90th percentile of all samples collected must be less than the 15 ppb action level (AL)	0 ppb	90th percentile = 2.3 ppb* (one sample exceeded the action level) Range: 0 to 17 ppb
	Nitrate/Nitrogen Nitrates and nitrites are nitrogen-oxygen compounds that can become a source of pollution in the form of unwanted nutrients.	10 ppm	10 ppm	0.14 ppm
	Fluoride A substance that is naturally occurring in some water sources, particularly groundwater. It is also added to drinking water to help prevent tooth decay.	4 ppm	4 ppm	0.18 ppm in source water 0.64 ppm in finished water 0.50 ppm in finished water when SCDHEC sampled on 5-22-13.
Disinfectants	Chlorine Dioxide A disinfection agent added in small amounts to protect against microbes.	800 ppb	800 ppb	260 ppb Range: 0 to 260 ppb
	Chloramine Residual A compound of chlorine and ammonia that is added in small amounts to treated water to protect against microbes.	4 ppm MRDL	4 ppm MRDLG	3.14 ppm running annual average (RAA) Range: 2.8 – 3.5 ppm
Disinfection Byproducts	Total Trihalomethanes (Stage 2) Stage 2 of the Disinfectants and Disinfection Byproducts Rule requires the locational running annual average (LRAA) for each sampling location to be below the MCL. CWS has eight sampling locations.	80 ppb	N/A	Range: BDL – 26.55 ppb LRAA: 22 ppb
	Total Haloacetic acids (Stage 2) Stage 2 of the Disinfectants and Disinfection Byproducts Rule requires the locational running annual average (LRAA) for each sampling location to be below the MCL. CWS has eight sampling locations.	60 ppb	N/A	Range: 14.73 – 43.12 ppb LRAA: 35 ppb
	Chlorite A byproduct formed when chlorine dioxide is used to disinfect water.	1 ppm	0.8 ppm	0.87 ppm Range: 0.51 – 0.87 ppm
Organic Compounds/Bacteria	Total Organic Carbon (TOC) The measure of organic substances in a body of water, mostly from naturally occurring sources such as plant material. TOC provides a measurement for the potential formation of disinfection byproducts.	No MCL; EPA requires a specific treatment technique (TT). % removal requirement varies from 35% - 55% TOC removal, depending on source water quality	N/A	Range: 55% to 84% removal Removal ratio RAA = 1.35 TOC values 2.0 – 3.7 ppm
	Total Coliform Bacteria A group of bacteria whose presence in water indicates possible contamination with soil or waste from warm blooded animals.	Presence of coliform bacteria in no more than 5% of monthly samples	0%	0.6% highest % of positive monthly samples Range: 0 – 0.6% All repeat samples were satisfactory
*Results are from 2012. EPA requires testing for copper and lead once every three years.				
Abbreviations: ppm: Parts per million (mg/L) ppb: Parts per billion (ug/L)		RAA: Running Annual Average NTU: Nephelometric Turbidity Units	BDL: Below Detection Limit LRAA: Locational Running Annual Average	

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.

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.

Action Level (AL)

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

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfectant

The highest level of disinfectant allowed in drinking water. That addition of a disinfectant is necessary to control microbial contamination.

Maximum Residual Disinfectant

The level of a drinking water disinfectant that is required to control microbial contamination. MRDLGs do not reflect the benefits of the disinfectant in controlling microbial contamination.

than **22,600**
 ll regulations and
 See below for a
 results.

Possible Sources in Water
Soil runoff
Human and animal sources
Human and animal sources
Corrosion of household plumbing materials
Corrosion of household plumbing materials
Runoff from fertilizers
Naturally occurring in source water and adjusted during treatment to prevent tooth decay.
Added for disinfection
Added for disinfection
Byproduct of disinfection
Byproduct of disinfection
Byproduct of disinfection
Naturally present in the environment
Naturally present in the environment

nt Level (MRDL)
 n drinking water. There is convincing evidence
 y for control of microbial contaminants.

nt Level Goal (MRDLG)
 below which there is no known or expected
 benefits of the use of disinfectants to control

Water Characteristics

The parameters in the table below affect the aesthetics of drinking water, such as taste, odor, and hardness. The USEPA has established secondary standards for some of these parameters, which are non-enforceable, recommended guidelines.

For commercial customers with boilers or chillers, breweries, and other customers who need additional information, please contact Becky Thames, Laboratory Manager, at (843) 863-4038 or thamesrm@charlestoncpw.com.

Parameter	CWS Water Average 2013	Highest Level Recommended by USEPA
Chloride	17 ppm	250 ppm
Color	4 PCU	15 PCU
Iron	<0.10 ppm	0.3 ppm
Manganese	<0.05 ppm	0.05 ppm
Total Dissolved Solids (TDS)	71 ppm	500 ppm
Sodium	12 ppm	No Standard
Alkalinity	29 ppm	
Conductivity	192 umhos/cm	
Hardness	59 ppm (3.44 gpg)	
Ortho-phosphate	1.1 ppm	
Silica	7.4 ppm	
Temperature	69.8°F (21°C)	
Abbreviations: ppm: Parts per million gpg: Grains per gallon PCU: Platinum Cobalt Units umhos/cm: Micromohs/cm		

Unregulated Contaminants

Unregulated contaminants are those that don't have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. Last year, as part of this effort, the EPA required water systems to test for 30 contaminants that are not currently regulated.

Name	Treated Water (Plant)		Distribution System	
	Average	Range	Average	Range
Total Chromium	0.26 ppb	BDL - 0.26 ppb	0.23 ppb	BDL - 0.23 ppb
Hexavalent Chromium (dissolved)	0.069 ppb	0.057 - 0.079 ppb	0.061 ppb	0.054 - 0.073 ppb
Strontium	53 ppb	45 - 59 ppb	53 ppb	46 - 61 ppb
Vanadium	1.0 ppb	0.5 - 1.4 ppb	0.94 ppb	0.53 - 1.2 ppb
Chlorate	187 ppb	150 - 240 ppb	210 ppb	190 - 230 ppb
1,4-Dioxane	0.228 ppb	0.211 - 0.244 ppb	BDL	BDL
ppb: parts per billion BDL: Below Detection Limit				

Lead and Drinking Water

Lead is a metal that can cause serious health problems at elevated levels of exposure, especially for pregnant women and young children.

Although the most common exposure is by swallowing or breathing in lead paint chips and dust, lead can also enter tap water by corrosion of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder.

To minimize this corrosion of lead into water, Charleston Water System adjusts the properties of our water to inhibit the chemical reaction that causes lead to leach into water from plumbing.

As an extra precaution, you can minimize the potential for lead exposure by flushing out water that has been sitting in your home's plumbing for several hours or more. Just let your water run for up to two minutes before using it for cooking or drinking.

Charleston Water System offers free lead tests. You can pick up a testing kit at our office locations: 103 St. Philip Street, Downtown, and 6296 Rivers Avenue, North Area. For more information about lead, call the Safe Drinking Water Hotline or visit www.epa.gov/safewater/lead.

Below are the monitoring results for the six unregulated constituents that were detected in our water. For more information please contact Mary Ann Fuller, SCDHEC, at (803) 898-2382 or fullerma@dhec.sc.gov.