

# Drinking Water Quality Report • Typical Water Quality for 1997

*Giardia* and *Cryptosporidium* are two types of microscopic protozoa that can cause illness in humans. There are many ways to come in contact with these parasites including contaminated foods, swimming pools, recreational waters, day care centers, contact with contaminated soil, nursing homes, and drinking water. CPW is taking steps to ensure these organisms do not pose a problem in the drinking water. The treatment plant has multiple barriers of protection such as enhanced chemical coagulation, filtration, disinfection, and careful monitoring of turbidity to ensure the optimum removal of these organisms. **CPW has never found any of these organisms in the Edisto River, Bushy Park Reservoir or in the treated drinking water.** However, for people with compromised immune systems, the EPA and the US Center for Disease Control offer the following advisory statement: "Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 are available from the Safe Drinking Water Hotline (800-426-4791)."

**Trihalomethanes** - Trihalomethanes (THMs) are formed as a by-product of the disinfection process to kill harmful bacteria. THMs are suspected to be possible cancer causing agents at very high levels over many years. As measured by the SC DHEC, the current annual average of THMs found in CPW water is 0.066 mg/l which is well **BELOW** the EPA limit of 0.100 mg/l. CPW has taken several steps to reduce the exposure of our customers to THMs. First, natural organics in the water are substantially reduced prior to the addition of chlorine. Second, a chemical is added which lowers the remaining level of organics. Finally, a secondary disinfectant (chloramines) which does not form THMs, is added to the distribution system.



ORGANICS (SOC & VOC)		
Parameter	CPW Water Average mg/l	Highest Level Allowed by EPA Regulation MCL mg/l
1,1-Dichloroethylene	Not detected	0.007
1,2-Dichlorobenzene	Not detected	0.005
cis-1,2-Dichloroethylene	Not detected	0.07
1,2-Dichloropropane	Not detected	0.005
1,1,1-Trichloroethane	Not detected	0.2
1,1,2-Trichloroethane	Not detected	0.005
1,2,4-Trichlorobenzene	Not detected	0.07
2,4,5-TP	Not detected	0.05
2,4-D	Not detected	0.07
Adipate	Not detected	0.4
Alachlor	Not detected	0.002
Aldicarb	Not detected	0.003
Aldicarb sulfone	Not detected	0.002
Aldicarb sulfoxide	Not detected	0.004
Atrazine	Not detected	0.003
Benzenes	Not detected	0.005
Carbofuran	Not detected	0.04
Carbon tetrachloride	Not detected	0.005
Chlordane	Not detected	0.002
Chlorobenzene	Not detected	0.1
Dalapon	Not detected	0.2
Dibromochloropropane	Not detected	0.0002
Dichloromethane	Not detected	0.005
Dinoseb	Not detected	0.007
Diquat	Not detected	0.02
Endothall	Not detected	0.1
Endrin	Not detected	0.002
Ethylbenzene	Not detected	0.7
Glyphosate	Not detected	0.7
Heptachlor	Not detected	0.0004
Heptachlor epoxide	Not detected	0.0002
Hexachlorobenzene	Not detected	0.001
Hexachlorocyclopentadiene	Not detected	0.05
Lindane	Not detected	0.0002
Methoxychlor	Not detected	0.04
o-Dichlorobenzene	Not detected	0.6
Oxamyl (Vydate)	Not detected	0.2
p-Dichlorobenzene	Not detected	0.075
PAHs (benzo(a)pyrene)	Not detected	0.0002
PCB's	Not detected	0.0005
Pentachlorophenol	Not detected	0.001
Phthalate, (di(2-ethylhexyl))	Not detected	0.006
Picloram	Not detected	0.5
Simazine	Not detected	0.004
Terachloroethylene	Not detected	0.005
Toluene	Not detected	1
Toxaphene	Not detected	0.003
trans-1,2-Dichloroethylene	Not detected	0.1
Trichloroethylene	Not detected	0.005
Trihalomethanes (total)	0.066	0.1
Vinyl chloride	Not detected	0.002
Xylenes (total)	Not detected	10

INORGANICS		
Parameter	CPW Water Average mg/l	Highest Level Allowed by EPA Regulation MCL mg/l
Antimony	Not detected	0.006
Barium	Not detected	2
Beryllium	Not detected	0.004
Cadmium	Not detected	0.005
Chromium	Not detected	0.1
Copper	0.04	1.3 action level
Fluoride	0.97	4.0
Lead	0.004	0.015 action level
Mercury	Not detected	0.002
Nickel	Not detected	0.1
Nitrite and Nitrate as N	0.66	10
Selenium	Not detected	0.05
Thallium	Not detected	0.002
Total Chlorine residual	3.0	must be detectable
Turbidity NTU	in compliance	<0.5 in 95% of samples/mo.

UNREGULATED		
Parameter	CPW Water Average mg/l	Highest Level Allowed by EPA Regulation MCL mg/l
Aldrin	Not detected	No standard
Butachlor	Not detected	No standard
Carbaryl	Not detected	No standard
Dicamba	Not detected	No standard
Dieldrin	Not detected	No standard
3-hydroxycarbofuran	Not detected	No standard
Methomyl	Not detected	No standard
Metolachlor	Not detected	No standard
Metribuzin	Not detected	No standard

ABBREVIATIONS		
c = degrees centigrade	mg/l = milligrams per liter	
MCL = maximum contaminant level	mrem/yr = millirems per year	
NTU = nephelometric turbidity units	pCi/L = pico curies per liter	
PCU = platinum cobalt units	umhos/cm = micro mhos per centimeter	

SECONDARY STANDARD		
Parameter	CPW Water Average mg/l	Highest Level Allowed by EPA Regulation MCL mg/l
Color	2	15 PCU
Chloride	15	250
Iron	0.06	0.3
Manganese	0.03	0.05
pH	8.5	6.5 to 8.5
Sulfate	26	400/500 (proposed)
Total Dissolved Solids	106	500

MICROBIOLOGICAL		
Parameter	CPW Water Average	Highest Level Allowed by EPA Regulation MCL
Total Coliforms	in compliance	<5% positive/month treatment technique
Giardia lamblia	Not detected	No standard
Cryptosporidium	Not detected	No standard

RADIONUCLIDES		
Parameter	CPW Water Average	Highest Level Allowed by EPA Regulation MCL
Gross beta	0.0 (+/- 1.77)	4 mrem/yr
Gross alpha	0.0 (+/- 1.6)	15 pCi/L

GENERAL INTEREST		
Parameter	CPW Water Average	Highest Level Allowed by EPA Regulation MCL
Alkalinity	23	No standard
Calcium Hardness	51	No standard
Total Hardness	56	No standard
Conductivity	151 umhos/cm	No standard
Ortho-phosphate	1.3	No standard
Silica	6.9	No standard
Sodium	5	No standard
Temperature	21C	No standard

**Turbidity** – Turbidity is a measurement of the clarity of the water and is an indicator of overall water quality. As an example, milk is turbid - you cannot see through it, while tea is not turbid since you can see through it. CPW measures the turbidity of the water on a continuous basis 24 hours a day, and has consistently produced water that is well below the EPA limit.



**Organics** – Man made organic chemicals such as SOC's (synthetic organic compounds) and VOC's (volatile organic compounds) can find their way into waterways from industrial pollution or run off of herbicides and pesticides. None of these chemicals have been found in our drinking water. CPW is fully in compliance with all Federal and State Drinking Water Standards.

For more information contact the CPW Customer Service Department at 727-6800 from 7:30am to 6:00pm Monday through Friday.

**CPW Customer Service Locations:**

- Main Office Downtown: 103 St Philip Street
- West Ashley Office: 4 Carriage Lane
- North Area Office: 6296 Rivers Avenue



Commissioners  
of Public Works  
of the City of Charleston

# 1997 Annual Drinking Water Quality Report

Every gallon of CPW water:

- ✓ meets all drinking water standards!
- ✓ is tested continuously for safety!
- ✓ has NO fat, calories, or cholesterol!



Our mission, as a customer-focused leader in the drinking water industry, is to provide a safe and abundant supply of drinking water and to enhance the climate for long-term economic and community development. It is our goal to provide this service at the lowest possible cost and at the highest level of quality in the industry. As a service to our customers, we are pleased to provide you with this annual drinking water quality report for 1997.

**Treatment Facility**

The Hanahan Water Treatment Plant is the largest single water treatment plant in SC. We currently produce 55 million gallons of water a day and have the capability to treat up to 118 million gallons per day. The plant uses state-of-the-art technology to produce the best quality drinking water possible at a reasonable cost. The plant is staffed 24 hours a day, 365 days a year by highly trained, state licensed operators. The technical ability and expertise of CPW personnel has allowed us to surpass all state and national water quality standards and regulations.



**Surface Water Source**

In 1997, CPW treated water from the EDISTO RIVER at the Hanahan Water Treatment Plant. In 1998, CPW will be adding a second high quality water source, Bushy Park Reservoir, which is



part of the Santee - Cooper River Basin. In order to provide tap water that is safe to drink, the Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (DHEC) prescribe regula-

tions which ensure that water sold by public water systems contains no harmful contaminants. The Food and Drug Administration (FDA) regulations prescribe similar limits for contaminants in bottled water. More information about contaminants and potential health effects can be obtained by calling the EPA hotline at 1-800-426-4791.

**Understanding the Significance of Compounds Found in Drinking Water**



**Fluoride** – Fluoride is added to drinking water to help prevent tooth decay. There is no naturally occurring fluoride in our water, therefore we add a small amount (1 mg/l) to meet the EPA, American Medical Association, and the American Dental Association recommended levels.

**Hardness** – The harder the water the more soap that is required to form a given amount of lather. Typically, if the amount of Calcium Carbonate (CaCO<sub>3</sub>) is over 100 mg/l the water is considered to be hard. CPW's water averages 56 mg/l and is considered to be soft to medium in hardness. This also equates to approximately 3.2 grains per gallon of hardness.

**Lead** – There has never been any significant amount of lead in the water as it leaves CPW's

Hanahan Water Treatment Plant. In the past, samples collected from within some customer's homes, with lead plumbing or copper plumbing with lead soldered joints, did show elevated lead levels. In response to this problem, CPW established an extensive program in 1992 to reduce the amount of lead and copper that could leach from the plumbing within home into the drinking water. We add a corrosion inhibitor which has reduced lead levels to almost zero in most homes. We have also maintained an extensive monitoring program of customer's homes and continue to offer free lead sampling for CPW customers. If you would like to have your water tested, pick up a sample bottle and instructions at any CPW business office (see back) and return the sample to the same location. You will receive the test results by mail within two weeks.



**Microbial Testing** – The daily tests we perform at the treatment plant and on the distribution system look for indicator organisms called Coliform Bacteria. These are harmless bacteria, but if they are detected, there may be a potential for harmful (pathogenic) organisms to be present. We collect over 1500 bacterial samples per month throughout our service area to ensure the water is as safe when it arrives at your home as it is when it leaves the drinking water treatment plant.