

2000 WATER QUALITY REPORT



What is in your tap water besides water?

This Water Quality Report tells you where your water comes from and what's in it. Take time to read it because when it comes to understanding drinking water, the most important ingredient is
YOU!

What's New:

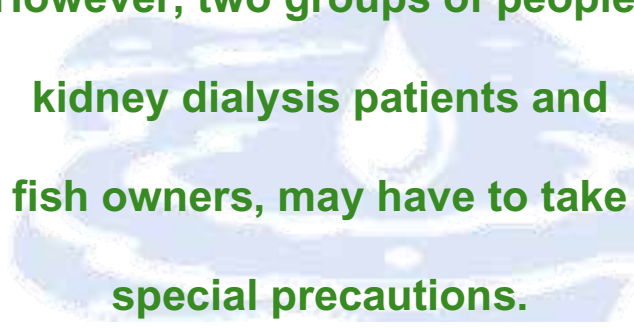
Providing high-quality drinking water that meets or exceeds all EPA standards is an ongoing process. In order to satisfy strict new standards regarding Disinfection By-Products (DBPs), the City will soon begin using a new disinfection process to treat your water.

Drinking water disinfection is a process that kills bacteria, viruses and protozoans in your water and prevents their regrowth in the distribution system. In the past, we have used chlorine as the disinfecting agent.

Chlorine however, readily reacts with naturally occurring compounds in the water leading to the formation of DBPs. Since some people who drink water containing high levels of DBPs, over many years, may experience health problems, we will begin using chloramines to disinfect your water this fall. The use of chloramines will lower the levels of DBPs in your drinking water.

CHLORAMINES ARE SAFE.

**However, two groups of people,
kidney dialysis patients and
fish owners, may have to take
special precautions.**



Definitions

Maximum Contaminant Level Goal or 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 or 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.

Treatment Technique or TT: A required process intended to reduce the level of a contaminant in drinking water.

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

ppm = concentration in parts per million, or milligrams per liter (mg/L); this is equivalent to 1¢ in \$10,000.

ppb = concentration in parts per billion, or micrograms per liter (µg/L); this is equivalent to 1¢ in \$10,000,000.

ppt = concentration in parts per trillion; this is equivalent to 1¢ in \$10,000,000,000.

pCi/L = picocuries per liter; a measure of radioactivity.

N/A = Not Applicable.

NLE = No Level Established.

NGE = No Goal Established.

NTU = Nephelometric Turbidity Units; units describing how cloudy a water sample appears.

< = Less than; when seen in a table, it usually refers to below detectable levels.

Contaminant: Anything found in water (including microorganisms, minerals, chemicals, radionuclides, etc.) that may be harmful to human health.

Raw Water: Water in its natural state, prior to any treatment for drinking.

Source Water: Water in its natural state, originating from the watershed that supplies a water system with its raw water.

Watershed: The land area from which water drains into a stream, river, or reservoir.

Treated Water: Water to be used by a public water system that has received the application of approved water treatment chemicals.

Drinking Water: Water that has been treated to comply with EPA regulations and is pumped to water customers for their use.

Water Quality Table - 1999 Data

Regulated Parameters	Concentration Units	EPA Goal MCLG	EPA Limit MCL	Portsmouth's Concentration Level	Typical Sources	Notes/ Health Effects
Microbial Contaminants						
Total Coliform Bacteria	--	0	Presents of coliform bacteria in >5% of monthly samples	1.9%	Normally present in the environment.	This value represents the highest monthly percentage of positive samples during 1999.
Fecal Coliform	--	0	A routine sample and a repeat sample are total coliform positive and one is also fecal or E. coli positive.	1	Human and animal fecal waste.	This value represents the total number of positive samples taken during 1999. A minimum of 100 samples are taken each month.
Turbidity	NTU	N/A	TT	0.65	Soil runoff	99% of samples taken met turbidity limits.
Radioactive Contaminants						
Beta/photon emitters	pCi/L	0	50	3.9	Decay of natural and man-made deposits.	The MCL for Beta particles is 4 mrem per year. EPA considers 50pCi/L to be the level of concern for beta particles.
Inorganic Contaminants						
Antimony	ppb	6	6	<2	Discard from petroleum refineries, fire retardants, ceramics, electronics, solder	

Arsenic	ppb	N/A	50	<2	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production waste	
Barium	ppm	2	2	<0.02	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	
Beryllium	ppb	4	4	<2	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	
Cadmium	ppb	5	5	<2	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	
Chromium	ppb	100	100	<10	Discharge from steel and pulp mills; erosion of natural deposits	
Copper	ppm	1.3	AL = 1.3	0.52	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	Zero of 102 samples taken exceeded Action Level
Cyanide	ppb	200	200	<10	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	Most recent data from 1996 (see Note 1 below)

Fluoride	ppm	4	4	1.5	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	
Lead	ppb	0	AL = 15	3	Corrosion of household plumbing systems; erosion of natural deposits	Zero of 102 samples taken exceeded Action Level
Selenium	ppb	50	50	<10	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	
Thallium	ppb	0.5	2	<2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	

Synthetic Organic Contaminants						
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2,4-D	ppb	70	70	<0.3	Runoff from herbicide used on row crops	Most recent data in 1994 (See Note 1 below)
Endrin	ppb	2	2	<0.4	Residue of banned insecticide	Most recent data in 1994 (See Note 1 below)
Lindane	ppt	200	200	<100	Runoff/leaching from insecticide used on cattle, umber, gardens, on fruits, vegetables, alfalfa, livestock	Most recent data in 1994 (See Note 1 below)

Non-Regulated Parameters	Concentration Units	Portsmouth's Concentration Level	Typical Sources
Additional Water Quality Parameters			
Aluminum	ppb	<200	
Iron	ppb	<200	Erosion of natural deposits; leaching from pipes, residual of drinking water treatment process
Manganese	ppb	30	Erosion of natural deposits; by-product of drinking water treatment process
Sodium	ppm	43	
pH	--	7.2	
Alkalinity – Total	ppm	60	Erosion of natural deposits
Chloride	ppm	13	Erosion of natural deposits
Color	PCU	26	Leaching from vegetation
Corrosion Index	--	10	
Calcium Hardness	ppm	22	
Hardness – Total	ppm	54	Erosion of natural deposits
Ammonia	ppb	<40	Runoff from fertilizer use; by-product of drinking water chloramination



Note 1: The Virginia Department of Health has waived the requirement to test for the following elements because they are not expected to occur in drinking water in this area: Synthetic Organic Pesticides, Carbamates, Volatile Fumigants, Chlorinated Herbicides, cyanide, diquat, dioxin, endothall, glyphosate, and asbestos.

Note 2: The City of Portsmouth has enhanced coagulation and Chloramines will be added to the filtration system in the fall of 2000. The addition of chloramines will reduce future TTHM levels in the future.

Note 3: ICR parameters represent 1998 data.



Why do dialysis patients have to take special precautions?

Like chlorine, chloramines have a toxic effect if not removed from water before it is used in kidney dialysis machines. The process to remove chloramines is slightly different from the process used to remove chlorine. All medical centers that perform kidney dialysis have been notified of this change.

How do chloramines affect fish?

Chloramines are toxic to fish just like chlorine. Again, the process for removing chloramines is a little different. Area pet stores have been informed of this change and should have dechlorinating products available.

Are chloramines new?

No, chloramines are currently being used throughout the US. Virginia, Newport News, Chesapeake, Richmond, and Hopewell are already using chloramines.

Is chloraminated water safe?

Yes, water treated with chloramines is safe for all household uses including drinking.

Will I notice a difference?

Possibly, chloramines are odorless and tasteless and some may miss the chlorine smell and taste.



YOUR TAP WATER comes from a system of four surface lakes and five deep wells.

About source water prior to treatment:

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.

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

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 metals, that can be naturally occurring or result from urban storm-water 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 storm-water 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 storm-water runoff, and septic systems.
- **Radioactive** contaminants that can be naturally occurring or the result of oil and gas production and mining activities.
- **Cryptosporidium** is a microbial organism. When ingested, it can cause diarrhea, fever, and other gastrointestinal symptoms. This organism is found in animal wastes and sewage and is washed into rivers and streams when it rains. The best defense against this organism is an effective treatment process, most importantly filtration. Portsmouth's triple-media filters are successfully removing tiny particles, including particles the same size as these organisms, from our water. We believe that new upgrades to our filtration and treatment process will enable us to achieve even greater particle removal, and thus greater protection from Cryptosporidium.

A word about drinking water...

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

2 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 people, and infants can be particularly at risk from infections. These people should seek advice about drinking water 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

At the City of Portsmouth Department of Public Utilities, we value our customers and work hard to ensure your satisfaction. If you have questions or comments about this report or other issues concerning water quality, please call us or the other sources of water quality information listed below:

City of Portsmouth
Department of Public Utilities
Water Quality Division
(757) 539-2201

Virginia Department of Health
Office of Water Programs
(757) 363-3876

U.S. Environmental Protection Agency
Safe Drinking Water Hotline
1-800-426-4791

You can participate in decisions that affect your drinking water quality, please contact the City Clerk at (757) 393-8639.