

# ***Pulaski County Public Service Authority***

*PWSID # 1155641*

## ***2008 Water Quality Report***

### **INTRODUCTION**

This Annual Drinking Water Quality Report for calendar year 2008 is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report or if you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact:

Eddie Fisher, Water Treatment Plant Superintendent, at (540) 980-7749

The times and location of regularly scheduled board meetings are as follows:

2<sup>nd</sup> Monday of every month at 9:00 am in the Pulaski County Administration Building, located at 142 Third Street, Pulaski, VA 24301

### **GENERAL INFORMATION**

Drinking water, including bottled drinking 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 can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) 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. (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. (4) 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. (5) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities. 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. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## **SOURCE(S) OF YOUR DRINKING WATER**

The sources of your drinking water are surface water as described below:

- The sources of supply for the Pulaski County PSA Water Treatment Plant is Claytor Lake. The raw water intake is located in the Draper section of Pulaski County.
- The Pulaski County PSA also has the ability to purchase water from the Radford Army Ammunition Plant 4330 to help serve the Belspring, Parrot, and Fairlawn areas. This connection is through a pump station located on Gate 10 Road.

A source water assessment of our system was conducted in 2002 by the Virginia Department of Health. The New River was determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available by contacting your water system operator at the phone number given elsewhere in this drinking water quality report.

## **DEFINITIONS**

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the next page shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2008. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

*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.

*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.

*Non-detects (ND)* - lab analysis indicates that the contaminant is not present

*Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or a single penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

*Parts per trillion (ppt) or Nanograms per liter (nanograms/l)* - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

*Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.

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

*Treatment Technique (TT)* - a required process intended to reduce the level of a contaminant in drinking water.

*Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

*Maximum Residual Disinfectant Level Goal or MRDLG* – the level of 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.

*Maximum Residual Disinfectant Level or MRDL* – 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.

## WATER QUALITY RESULTS

### Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate + Nitrite (ppm)	10	10	0.74	N	N/A	01/10/2008	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.95	N	N/A	01/10/2008	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Alpha Emitters (pCi/l)	0	15	1.2	N	N/A	07/29/2008	Erosion of Natural Deposits
Combined Radium (pCi/l)	0	5	1.2	N	N/A	07/29/2008	Erosion of Natural Deposits
Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.35	N	0.59 – 2.0	2008	Water additive used to control microbes
TOC [Total Organic Carbon]	N/A	TT, met when $\geq 1$ or alternate criteria is met*	0.97	N	0.87 – 1.36	2008	Naturally present in the environment
HAA5s [Haloacetic Acids] (ppb)	N/A	60	60	N	38 – 104	2008	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	N/A	80	90	N	32 – 132	2008	By-product of drinking water disinfection
Turbidity (NTU)	N/A	TT, 1 NTU Max	0.30	N	0.02 – 0.30	2008	Soil runoff
		TT, $\leq 0.3$ NTU 95% of the time	100%	N	N/A		

\*Pulaski County PSA water system had a minimum TOC removal ratio (using the four quarter running annual averages) of 0.97 during the 2<sup>nd</sup> quarter 2008. However, the average treated water TOC was 1.432 mg/L for the four quarter running annual for 2<sup>nd</sup> quarter 2008. Therefore, the PSA waterworks was in compliance with the treatment technique for control of disinfection byproduct precursors by meeting one of the alternative compliance criteria – having treated water TOC < 2.0 mg/L calculated quarterly as a running annual average.

### Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90 <sup>th</sup> Percentile	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	AL = 15	9	08 - 09/2006	1	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

The water quality results in the above table are from testing done in 2008. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

MCL's are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

### VIOLATION INFORMATION

During the second quarter of 2008, the Pulaski County PSA waterworks exceeded the four quarter Primary Maximum Contaminant Level (PMCL) running annual average of 80 ppb for Total Trihalomethanes (TTHMs) contained in the Commonwealth of Virginia/State Board of Health Waterworks Regulations. The results indicate that the four quarter running annual average TTHM concentration was 90 ppb for the second quarter 2008. The United States Environmental Protection Agency (USEPA) sets drinking water standards and requires the disinfection of drinking water. Disinfection of public drinking water is necessary to prevent waterborne diseases such as typhoid and cholera. However, the disinfectants themselves can react with naturally occurring material in the source water to form unintended byproducts which may pose a health risk. TTHMs are one of the known byproducts of the drinking water disinfection process that have a PMCL and this waterworks is required to monitor the distribution system on a quarterly basis. Some people who drink water containing TTHMs in excess of the MCL over many years could experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. Pulaski County PSA is evaluating changes to their distribution system operations to minimize the water residence time in an attempt to reduce the formation of TTHM compounds.

### ADDITIONAL HEALTH INFORMATION

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 materials and components associated with service lines and home plumbing. This waterworks 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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 <http://www.epa.gov/safewater/lead>.