

HENRY COUNTY PUBLIC SERVICE AUTHORITY

Annual Drinking Water Quality Report for 2007



INTRODUCTION

This Annual Drinking Water Quality Report 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).

Si usted no habla ni lee ingles, pida por favor que alguien traduzca este documento para usted.

If you have questions about this report or want additional information about any aspect of your drinking water, please contact the Public Service Authority at (276) 634-2500. The mailing address is P.O. Box 69, Collinsville, VA 24078. The Internet site is www.henrycountyva.gov. Henry County Public Service Authority's Board meets at 7:00pm, on the 3rd Monday of each month.

GENERAL INFORMATION

The source of drinking water (both tap water and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the land or through the ground, it dissolves naturally occurring mineral and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water includes: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural live stock operations, and wildlife. (2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm-water 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 storm-water 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 storm-water 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 limits 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. 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. Immune-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).

DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The tables on the following pages show the results of our monitoring for the past calendar year. 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:

- *Non-detects (ND)* - lab analysis indicates that the contaminant is not present
- *NR*- Not Required
- *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.
- *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.
- *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 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.
- *Chlorination*: The application of chlorine or chlorine compounds to water, generally for the purpose of disinfection, but frequently for chemical oxidation and odor control.
- *Coagulation*: The conversion of very small particles into small visible particles by chemical addition.
- *Filtration*: The process of contacting the water with filter media for the removal of very fine particles.
- *Fluoridation*: The addition of fluoride to water to optimize reduction of tooth decay in children.
- *Flocculation*: In water treatment it's the gentle mixing of the water and chemicals by either mechanical or hydraulic means to help with the coagulation process.
- *Settling*: The process of removing suspended matter carried by water, by gravity.
- *Maximum Disinfectant Residual Level (MDRL)* - 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.
- *Maximum Disinfectant Residual Level Goal (MDRLG)* *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.*

SERVICE AREAS

Contained within this correspondence are specific reports on our service areas.

If you live in the Ridgeway, 220 South and 58 West areas please read the 220South, 58West water system report. If you live in the Mount Olivet, Axton, and 58East areas please read the 58East/Axton water system report. Your water is provided by the City of Martinsville Water Purification Plant and is supplied by the City's Beaver Creek Reservoir and Leatherwood Creek. If you live in Sandy Level please read the Sandy Level report. Your water is provided by the City of Eden, NC water plant and supplied by the Dan River. If you live in the Bassett, Stanleytown, Fieldale, Collinsville, Stones Dairy, and 57 West areas please read the Upper Smith River Water Filtration Plant report. The Upper Smith River Water Filtration Plant water supply is the Smith River and Philpott Reservoir.

ABOUT TREATMENT

Treatment of the raw water consists of chemical addition, fluoridation, coagulation, flocculation, settling, filtration, and chlorination. These processes work together to remove the physical, chemical, and biological contaminants to make the water safe for drinking.

The Virginia Department of Health completed a source water assessment for Upper Smith River and the City of Martinsville sources waters during 2001/2002. The sources water for each of the systems were 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 (none in this case) within the last 5 years. The reports are available by contacting the Upper Smith River, 590 Philpott Drive. Bassett, Phone 629-3227 or City of Martinsville's Water Purification Plant on Clearview Drive Martinsville, phone 276-656-5137 during business hours.

Source Water Assessment Program (SWAP) And Its Availability For the City of Eden, NC

The State of North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply Section has conducted Source Water Assessments on all water supplies in the State. The Source Water Assessment evaluates the watershed supplying your water for Potential Contamination Sites (PCS). North Carolina Public Water Supply Section has assigned each drinking water source a relative "Susceptibility Rating" characterized as "Higher, Moderate or Lower." A susceptibility rating of "Higher" does not imply poor drinking water quality. Susceptibility is an indication of a water supply's potential to become contaminated by PCSs within the assessment area. The values assigned by our Source Water Assessment were "higher" for Inherent Vulnerability, "moderate" for Contaminant Rating and "higher" for Susceptibility Rating. The contaminant rating for your water source was determined based on the number and location of PCSs within the delineated area. The inherent vulnerability rating of your water source refers to the geologic characteristics or existing conditions of the surface water source and the delineated area (watershed). Susceptibility rating for your surface water is determined by combining the contaminant rating and the inherent vulnerability rating. Details of how North Carolina prepared source water assessments is available on the State DENR website at (www.deh.enr.state.nc.us/pws/swap). To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699 – 1634, or email request to swap@ncmail.net. Please indicate PWSID 02-79-010 and provide your name, mailing address and phone number. If any questions about SWAP report please contact the Source Water Assessment staff by phone at 919 719 2633.

LEAD IN DRINKING WATER

Infant and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's tap water, you may wish to have your water tested by an independent laboratory. Flushing your tap for 30 seconds to two minutes, particularly first thing in the morning, is an effective way to reduce the

possibility of lead contamination from your home plumbing. Additional information is available from the safe Drinking Water Hotline (800-426-4791)

TRihalOMETHANES IN DRINKING WATER

Disinfection is an absolutely essential component in the treatment of drinking water, preventing the occurrence and the spread of many serious and potentially deadly water-borne diseases. Chlorination is a time proven method for disinfection, but some minute amounts of byproducts do results in the form of trihalomethanes (THMs) as chlorine combines with naturally occurring matter (such as leaf debris) in the raw water. Some people who drink water containing THMs 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. Additional information is available from the safe Drinking Water Hotline (800-426-4791)

TABLES

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment. Concentrations of contaminants that do not change frequently are monitored less often than once per year.

The U.S. Environmental Protection Agency sets MCLs at very stringent levels. 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.

TABLES NOTES

In the tables that follow, these items may be noted:

a MCL: (Systems that collect 40 or more samples per month) 5% of monthly samples are positive; (systems that collect fewer than 40 samples per month) 1 positive monthly sample.

b UR – Unregulated

c AL – Action Level: Copper is 1.3 mg/L; Lead is 15ppb

d 95% of filter effluent samples <.3ntu and 100% maximum of 1 NTU.

e Primary Contaminant Levels (PMCL) for TTHMs & HAA_{5s} are base on a running average.

f THE 58 EAST,AXTON & 220 SOUTH 58 WEST SYSTEMS OF THE HENRY COUNTY PUBLIC SERVICE AUTHORITY RECEIVED VIOLATIONS FOR TRIHALOMETHANES (THMS) IN 2007.

Samples are collected each quarter from the point of maximum residence time in the distribution system, which is likely to reflect the highest levels detected in the system. All locations in the distribution system may not have TTHM & HAA5 levels as high as those detected in required monitoring. TTHMs and HAA5s are formed when trace amounts of naturally occurring organic compounds in the raw water source combine with chlorine used to disinfect the treated water. Some people who drink water containing TTHMs and / or HAA5s in excess of the MCLs over many years have an increased risk of getting cancer or could experience problems with their liver, kidneys, or central nervous systems. This is not considered an immediate risk and customers do not need to use an alternative water supply. The water served to customers of these systems is water purchased from the City of Martinsville. Henry County Public Service Authority will continue to work with the City and/or make necessary modifications to ensure the water supply meets all applicable drinking water standards. Monitoring for TTHMs & HAA5s will continue to verify levels in the water supply.

Results for the Upper Smith River WFP for 2007 - Bassett, Stanleytown, Fieldale, Collinsville, 57 West, Stones Dairy							
CONTAMINANT	MCLG	MCL	LEVEL FOUND	RANGE	VIOLATION	DATE OF SAMPLE	MAJOR SOURCE OF CONTAMINATION
Microbiological Contaminants							
Turbidity Filtered (NTU)	NA	TT	0.10	0.02 to 0.10	None £	Every 2 hours	Soil runoff
Inorganic Contaminants							
Nitrate (ppm)	10	10	0.15	NA	None	4/07	Runoff from fertilizer use: Leaching from septic tanks, sewage; Erosion of natural deposits
Copper (ppm)	1.3	1.3	<0.05 @ 90 th %	All ≤ 0.050	None £	8/05	Corrosion of household pumping. Erosion of natural deposits; leaching from wood preservatives
Fluoride (ppm)	4	4	0.85 avg.	0.71 to 1.04	None	Daily	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Microbiological Contaminants							
Total Coliform	0	1	1	NA	None ^a	9/2007	Naturally occurring in the environment.
Turbidity (NTU)	NA	TT	0.36	Max 0.36	None ^d	Every 2 hours	Soil runoff
Inorganic Contaminants							
Nitrate + Nitrite (ppm)	10	10	0.13	NA	None	4/2007	Runoff from fertilizer use; Leaching from septic tank use, sewage; Erosion of natural deposits
Total Organic Carbon (ratio)	NA	TT-Based on % of removed during treatment process; Removal requirement are met when ratio \geq 1.0	0.98 (minimum running ave. removal ratio)	0.30 to 1.63 (monthly ratio)	None	Monthly	Naturally present in the environment.
Fluoride (ppm)	4	4	Avg. 0.95	ND to 1.40	None ^g	Daily	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Organic							
Chlorine (Distribution) (ppm)	MRDLG=4	MRDL=4	1.07-highest 4 quarter Avg.	0.22 to 1.98	None	Monthly	Water additive used to control microbes.
HAA5s (Total Halocetic Acids) (ppb)	NA	60	53- highest 4 quarter Avg.	34 to 59	None ^e	Quarterly	By-product of drinking water chlorination
Total Trihalomethanes (TTHMs) (ppb)	NA	80	100 – highest	52 to 120	YES ^f	Quarterly	By-product of

			4 quarter Avg.				drinking water chlorination
Radiological							
Alpha Emitters (pCi/L)	0	15	1.1	NA	None	4/2003	Erosion of natural radioactive deposits
Combined Radium (pCi/L)	0	5	0.2	NA	None	4/2003	Erosion of natural r deposits
Beta Emitters (pCi/L)	0	50	2.3	NA	None	4/2003	Decay of natural and manmade deposits
Metals- Regulated at Customer Taps							
Copper (ppm)	1.3	1.3	< 0.05 @ 90 percentile	<0.05	None £	2005	Corrosion of household plumbing system; Erosion of natural deposits;
Lead (ppb)	0	15	<5 @ 90 percentile	<5	None £	2005	Corrosion of household plumbing system; Erosion of natural deposits;
Unregulated							
Sodium (ppm)	NA	NA	10.5	NA	None	4/2007	Naturally occurring in the environment and added by some of the chemical addition at the treatment plant.
Aluminum	NA	0.05 to 0.20	0.23	NA	None	4/2007	Byproduct of Aluminum sulfate coagulant

Results for 2007 - 58 East, Axton

CONTAMINANT	MCLG	MCL	LEVEL FOUND	RANGE	VIOLATION	DATE OF SAMPLE	MAJOR SOURCE OF CONTAMINATION
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Microbiological Contaminants							
Total Coliform	0	1	1	NA	None ^a	5/2007	Naturally occurring in the environment.
Contaminants							
Turbidity NTU	NA	TT	0.36	Max 0.36	None ^e	Every 2 hours	Soil runoff
Inorganic Contaminants							
Nitrate + Nitrite (ppm)	10	10	0.13	NA	None	4/2007	Runoff from fertilizer use; Leaching from septic tank use, sewage; Erosion of natural deposits
Total Organic Carbon (ratio)	NA	TT-Based on % of removed during treatment process; Removal requirement are met when ratio ≥ 1.0	0.98 minimum annual ave. removal ratio for 2007	0.30 to 1.63	None	Monthly	Naturally present in the environment.
Fluoride (ppm)	4	4	Avg. 0.95	ND to 1.40	None ^g	Daily	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Organic							
Chlorine (Distribution) (ppm)	MRDLG=4	MRDL=4	0.82 highest quarterly avg.	0.2 to 2.2	None	Monthly	Additive used to control microbes.
Total Halocetic Acids (HAA5s) ppb	NA	60ppb	59- highest 4 quarter avg.	6.4 to 64	None	Quarterly	By-product of drinking water chlorination
Total Trihalomethanes (TTHMs) ppb	NA	80ppb	81 – highest 4 quarter avg.	.33 to 130	YES ^f	Quarterly	By-product of drinking water chlorination
Radiological							
Alpha Emitters (pCi/L)	0	15	1.1	NA	None	4/2003	Erosion of natural radioactive deposits
Combined Radium (pCi/L)	0	5	0.2	NA	None	4/2003	Erosion of natural deposits

Beta Emitters (pCi/L)	0	50	2.3	NA	None	4/2003	Decay of natural and manmade deposits
Metals- Regulated at Customer Taps							
Copper (ppm)	1.3	1.3	< 0.04 @ 90 percentile	< 0.04 to 0.08	None £	2005	Corrosion of household plumbing system; Erosion of natural deposits;
Lead (ppb)	0	15	<2 @ 90 percentile	<2 to 4	None £	2005	Corrosion of household plumbing system; Erosion of natural deposits;
Unregulated							
Sodium (ppm)	NA	NA	10.4	NA	None	4/2007	Naturally occurring in the environment and added by some of the chemical addition at the treatment plant.
Aluminum (ppm)	NA	0.05 to 0.20	0.23	NA	None	4/2007	

Results for 2007 - Sandy Level, Log Town							
CONTAMINANT	MCLG	MCL	LEVEL FOUND	RANGE	VIOLATION	DATE OF SAMPLE	MAJOR SOURCE OF CONTAMINATION
Contaminants							
Turbidity (NTU)	NA	TT	0.18	0.04 to 0.18	None £	2007	Soil runoff
Organic							
Chlorine (Distribution) (ppm)	MRDLG=4	MRDL=4	.072- highest quarterly avg.	0.30 to 1.30	None	Monthly	Water additive used to control microbes
Total Organic Carbons	NA	TT- Based on % of removal during treatment process; Removal requirement are met when ratio ≥ 1.0	2.36	1.10 to 2.36	None	2007	Naturally present in the environment
Total Trihalomethanes	80	80	60 highest	34 to 84	None	Quarterly	By-product of drinking

(TTHMs) (ppb)			4 quarterly ave.				water chlorination
Haloacetic Acids (HAAs) (ppb)	60	60	23 highest 4quarterly ave.	12 to 30	None	Quarterly	By-product of drinking water chlorination
Inorganic							
Fluoride (ppm)	4	4	1.29	0.02 to 1.29	None <i>g</i>	2007	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	<1.00	<1.00	None	2007	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	UR	UR	9.33	9.33	None	2007	Erosion of natural deposits; Leaching
Metals – Regulated At Customers Taps							
Copper, (ppm)	1.3	AL=1.3	<0.04 @ 90 th percentile	<0.04 All 5 samples less than action level	None <i>£</i>	9/2006	Corrosion of household plumbing system; Erosion of natural deposits;
Lead, (ppb)	15	15	<2 @ 90 th percentile	<2 All 5 samples less than action level	None <i>£</i>	9/2006	Corrosion of household plumbing system; Erosion of natural deposits;
Unregulated Contaminants							
Chloroform (ppb) (City of Eden's VOCs)	UR	UR	14.0	NA	NA <i>£</i>	2007	Required to monitor this contaminant while EPA considers its MCL. By-product of drinking water chlorination
Sulfate (ppm)	500		15.9	15.9		2007	Runoff; Erosion of

							natural deposits; Drinking water treatment process
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