ANNUAL WATER QUALITY REPORT

HANOVER COUNTY DEPARTMENT OF PUBLIC UTILITIES

Reliably Providing Life's Little Comforts

DIANNE RIDGE SERVICE AREA — WATER TESTING PERFORMED IN 2015

Water Quality Meets Regulatory Mark

Hanover County's Department of Public Utilities is committed to providing its customers with a safe and reliable supply of high-quality drinking water. The quality of our drinking water is verified through regular testing using sophisticated equipment and advanced procedures. The annual "Consumer Confidence Report," required by the Safe Drinking Water Act (SDWA), explains where your water comes from, what our test results show about its quality, and contains other useful information concerning the water Public Utilities provides. In an effort to be more environmentally and financially responsible we are making the annual Consumer Confidence Report available in a digital format via our website at www.hanovercounty.gov. Customers that want a paper copy can obtain one by calling Customer Service at (804) 365-6024 or by stopping by our office during normal business hours. Customer Service can also be contacted with any questions or comments about this report or your service.

Where Does My Water Come From?

Hanover County's Department of Public Utilities provides water to its customers from a variety of sources and locations. The Dianne Ridge Service Area water supply comes from a deep-drilled well that withdraws ground water from the Potomac Aquifer.

Meeting the Challenge

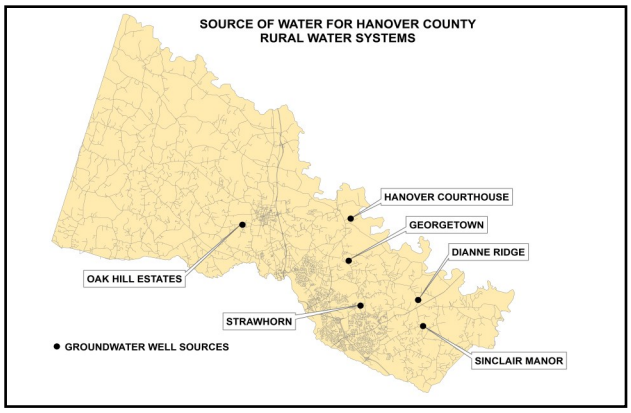
Public Utilities owns, operates, and maintains public water and wastewater systems in the Suburban Service Area, the Hanover Courthouse Area, and five rural residential subdivisions.

Rural systems operated by Public Utilities include Georgetown, Dianne Ridge, Oak Hill Estates, Strawhorn, and Sinclair Manor.

Public Utilities provides service to approximately 19,995 water customers and 19,428 wastewater customers.

Public Utilities is a self supporting enterprise whereby the operations and capital expenditures are funded with revenues generated from customer user fees and one-time fees paid for capacity at the time of connection.

The Dianne Ridge Service Area included 22 water customers and had a peak daily use of approximately 4,500 gallons.



The Water Treatment Process

The treatment of well water at Dianne Ridge includes precautionary disinfection through chlorination.

Hanover: People, Tradition and Spirit

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Additional Health Information

Drinking water, including bottled water, may reasonably be expected to contain 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 Environmental Protection Agency's 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 radioactive materials and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- 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.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organics, which 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, 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, the EPA prescribes regulations that 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 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 persons, 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 are available from the Safe Drinking Water Hotline (800) 426-4791.

Detected Contaminants

The table located on the following page shows the results of our water quality analyses for the 2015 calendar year. The Environmental Protection Agency (EPA) requires Hanover County to routinely monitor a wide range of drinking water contaminants. Every regulated contaminant that was detected in the water, even in trace amounts, is listed here. Some contaminants are not tested annually since their levels generally do not change over time.

National Primary Drinking Water Regulation Compliance

Please contact us at (804) 365-6024 with any questions you might have about Hanover County Department of Public Utilities or about your water quality and visit our website at www.hanovercounty.gov for other useful information and conservation tips.

Source Water Assessment

The U.S. Environmental Protection Agency required the Virginia Department of Health (VDH) to evaluate the susceptibility of a water system's source water becoming contaminated. Contamination sources and pathways were reviewed using maps, known and observed activities, water quality data, and information about the Dianne Ridge Service Area. Based on the criteria used in the study, the VDH found that on a relative basis, Dianne Ridge Service Area source water is of high susceptibility to contamination. This does NOT mean that your drinking water is unsafe. Public Utilities successfully uses multiple protection barriers to assure a high quality water supply as described in the rest of this report. It does suggest; however, that as our population grows, government and citizens must be aware of the potential impact on drinking water sources. A copy of the source water assessment report is available by contacting Customer Service at (804) 365-6024.

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Regulated Contaminants								
Inorganic Contaminants								
Contaminant	**Date Tested**	**Unit**	**Action Level (AL)**	**MCLG**	**90th Percentile[1]**	**Individual Samples Above AL[2]**	**Major Sources**	**Violation**
Copper	6/2014	ppm	1.3	1.3	0.1	None	Corrosion of household plumbing systems.	No
Lead	6/2014	ppb	15	0	2	None	Corrosion of household plumbing systems.	No
Contaminant	**Date Tested**	**Unit**	**MCL**	**MCLG**	**Detected Level**	**Range**	**Major Sources**	**Violation**
Chlorine	2015	ppm	MRDL = 4 As Cl_2	MRDLG = 4 As Cl_2	1.4[3]	1.1-2.3[3]	Water additive used to control microbes.	No
Barium	1/2013	ppm	2	2	0.01	N/A	Erosion of natural deposits.	No
Fluoride	1/2013	ppm	4	4	0.34	N/A	Erosion of natural deposits.	No
Radioactive Contaminants								
Gross Alpha	10/2013	pCi/L	15	0	12.4	N/A	Erosion of natural deposits.	No
Volatile Organic Contaminants								
TTHMs (Total Trihalomethanes)	7/2013	ppb	80	N/A	7.0	N/A	By-product from drinking water chlorination.	No
HAA5 (Haloacetic Acids)	7/2013	ppb	60	N/A	1.2	N/A	By-product from drinking water chlorination.	No

We are pleased to report to you that there were no detections of total coliforms or E. coli in the monthly samples collected during calendar year 2015.

Definitions

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

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MRDL = Maximum Residual Disinfectant Level

MRDLG = Maximum Residual Disinfectant Level Goal

N/A = Not Applicable

ppm = parts per million, or milligrams per liter (mg/l)

ppb = parts per billion, or micrograms per liter (µg/l)

pCi/L = picocuries per liter (a measure of radioactivity)

ND = None Detected

[1] Copper and Lead – 90th percentile value of the latest round of sampling.
[2] Number of individual samples that exceeded the 15 ppb (Lead) or 1.3 ppm (Copper).
[3] Amount detected is the highest rolling annual average. Range is the lowest and highest of all samples.

Lead in Drinking Water

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. Hanover Public Utilities 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 30 seconds to 2 minutes 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 at (800) 426-4791 or at http://www.epa.gov/safewater/lead.

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Protecting Your Water

Drinking water may become contaminated through uncontrolled cross-connections or backflows. It is your responsibility to protect the quality of the water once it has entered your property or your home.

What is a Cross-Connection?

A "cross-connection" is any connection between your drinking water and a source of contamination. A cross-connection exists when there is a physical connection between drinking water piping and another system. An example is a lawn irrigation system or fire sprinkler system connected to both the public water system and another water source. It is important to eliminate cross-connections to prevent contamination of the water system.

What is a Backflow?

A "backflow" occurs when water in a hose or a water pipe goes backward. This is caused by a change in water pressure. When a backflow occurs, contaminates can end up in your home piping. For example, if while washing your car there is a significant water pressure drop while the hose is submerged in a bucket of soapy water, the water could flow backwards if a proper backflow preventer is not installed. Care should be taken to make sure proper backflow preventers are installed on all fixtures.

Where can Backflow occur?

- Irrigation systems: Irrigation systems make watering your lawn or garden much easier, but if not properly constructed, a backflow can occur. Backflow protection must be provided on all irrigation systems with a reduced pressure zone device (RPZ), or a pressure type anti-siphon vacuum breaker (PVB) which must be inspected and serviced annually.

- Hose Bibs: The ordinary garden hose is one of the most common ways to contaminate the water supply. This can happen when one end of the hose is attached to an outdoor faucet, and the other end is connected to an aspirator type bottle or submerged in a liquid. Insecticides or other chemicals can be siphoned back into your water system. You can easily prevent this by installing a hose bib vacuum breaker. This is a small, inexpensive device that attaches to a threaded hose bib. Vacuum breakers are required to be installed on all hose bibs.

Vacuum Breaker

- Sinks, Tubs, Tanks: The faucets in your bathroom or kitchen must be located so that the end of the faucet is above the overflow level of the sink or tub. Fill lines to water troughs, pools and tanks must also be physically separated or "air-gapped". If there is no air-gap, the contents can be "back siphoned" into your water system.

- Toilets: Toilets need water to flush the waste materials into the sewer system. The water that flushes the toilet enters into the toilet tank from the small hose or pipe connected to the bottom of the tank. It is essential that the float-valve inside of the tank is the correct type so that the contents of the tank don't get back into your water system.

IMPORTANT NOTICE: Cross-connections and backflows are most commonly found in irrigation systems and can create health hazards. The safety of Hanover's water system is at risk when backflow prevention devices are not installed or maintained properly. These devices on irrigation systems must be inspected and serviced annually. An excellent time to have backflow prevention devices inspected and serviced is in the fall when systems are winterized. When returning the system to service in the spring, care should be taken not to damage the device. Please be a good neighbor and join Hanover County Public Utilities in keeping our drinking water system safe. For more information please contact Customer Service at (804) 365-6024 or visit us on the web at www.hanovercounty.gov.

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Hanover County Department of Public Utilities
P.O. Box 470
7516 County Complex Road
Hanover, VA 23069-0470

Phone: 804-365-6024
Email: PublicUtilities@hanovercounty.gov
www.hanovercounty.gov