



# High Knob Utilities, Inc.

17 Windy Way • Front Royal VA 22630 • 540-635-6131  
Fax: (540) 635-6635 • E-mail: [hkoffice@earthlink.net](mailto:hkoffice@earthlink.net)  
Website: <http://www.hkui.org>

## Annual Drinking Water Quality Report – 2005

This Annual Drinking Water Quality Report for calendar year 2005 is designed to provide you with valuable information about your drinking water quality. We are committed to providing 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 meets all state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report, 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:

Mr. Keith Arnett, President, High Knob Utilities, Inc.  
Mr. Dan Althouse, Water Operator, High Knob Utilities, Inc.  
Phone: 540-635-6131 E-mail: [hkoffice@earthlink.net](mailto:hkoffice@earthlink.net)

### GENERAL INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

All 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, and 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. Environmental Protection Agency and Center for Disease Control 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).

## **SOURCES AND TREATMENT OF YOUR DRINKING WATER**

Your drinking water is groundwater obtained from five springs and six drilled wells. Water is distributed throughout the community by three booster pump stations, seven storage reservoirs, and various sized distribution piping.

Treatment is provided at springs number 1, 3, and 4, and wells number 1, 2, 3, 4, 5, and 6. Springs 1 and 3 and wells 1, 2, 3, 4, 5, and 6 are each equipped with a solution chlorinator that injects a chlorine solution to disinfect the water prior to distribution. Spring 4 is equipped with a solution chlorinator that injects a chlorine solution to disinfect the combined flows of springs number 4, 5, and 6 prior to distribution.

## **SOURCE WATER ASSESSMENTS**

Under a new program being developed by the VDH, a detailed source water assessment will be conducted within the next few years to find ways to better protect our water sources. After the assessment is conducted, we will provide you with information about potential sources of contamination and measures to reduce or eliminate the sources of contamination.

## **QUALITY OF YOUR DRINKING WATER**

Your drinking water is routinely monitored according to federal and state regulations for a variety of contaminants. The tables included in this report show the results of our monitoring for the period of 1 January 2005 to 31 December 2005.

Most of the results in the tables are from testing done in 2005. 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.

## **DEFINITIONS**

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:

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

*Entry Point (EP)* – place where water from the source or sources after the application of any treatment is delivered to the distribution system

*Maximum Contaminant Level (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 (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.

*Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

*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 (micrograms/l)* - 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)* - a measure of the radioactivity in water.

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

*Variances and exemptions* - state or Environmental Protection Agency permission to not meet an MCL or a treatment technique under certain conditions

## **WATER QUALITY RESULTS**

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. These tables list 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.

Maximum Contaminant Levels (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 MCL's 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.

### **Microbiological**

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
<b>Total Coliform Bacteria</b>	0	Presence of Coliform bacteria in > 1 sample per month	0	Presence or Absence	NO	Monthly	Naturally present in the environment

### Inorganic Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
<b>Nitrates:</b> Spring 1 EP Spring 3/Well 3 EP Spring 4/5/6 EP Well 1 EP Well 2 EP Well 4 EP	10	10	- 0.71 2.07 1.95 1.75 1.61 2.46	mg/l	NO	12/05	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits

### Volatile Organic Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
<b>No Volatile Organic Contaminants were detected</b>						12/05	

### Disinfection Byproduct Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
<b>Total Trihalomethanes (TTHM)<sup>1</sup></b>	0	80	3	ppb	NO	4 <sup>th</sup> Qtr. 2005	By-product of drinking water chlorination
<b>Haloacetic Acid (HAA5)</b>	0	60	< 1	ppb	NO	4 <sup>th</sup> Qtr. 2005	By-product of drinking water chlorination

<sup>1</sup> Some people who drink water containing Total Trihalomethanes in excess of the MCL over many years could experience problems with their liver, kidneys, or central, nervous systems, and may have increased risk of getting cancer.

## Radiological Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
<b>Alpha Emitters:</b>	0	15	--	pCi/l	NO		Erosion of natural deposits
Spring 1 EP			0.2			10/03	
Spring 3/Well 3 EP			0.4			01/04	
Spring 4/5/6 EP			0.5			10/03	
Well 1 EP			ND			10/03	
Well 2 EP			0.5			10/03	
Well 4 EP			0.5			10/03	
<b>Beta Emitters:</b>	0	50	--	pCi/l	NO		Decay of natural and man-made deposits
Spring 1 EP			1.0			10/03	
Spring 3/Well 3 EP			1.0			01/04	
Spring 4/5/6 EP			0.2			10/03	
Well 1 EP			0.4			10/03	
Well 2 EP			0.7			10/03	
Well 4 EP			1.8			10/03	
<b>Combined Radium</b>	0	5	--	pCi/l	NO		Erosion of natural deposits
Spring 1 EP			ND			10/03	
Spring 3/Well 3 EP			ND			01/04	
Spring 4/5/6 EP			0.8			10/03	
Well 1 EP			0.9			10/03	
Well 2 EP			1.2			10/03	
Well 4 EP	0.5	10/03					

## Lead and Copper (Most Recent Monitoring Period – January 2004)

Contaminant	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Samples > AL	Typical Source of Contamination
<b>Lead</b> <sup>1</sup>	0	AL = 15	< 0.005	ppb	NO	0	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Copper</b> <sup>2</sup>	1.3	AL = 1.3	1.944	mg/l	YES	1	

<sup>1</sup> The High Knob water system uses no copper or lead materials; therefore, testing samples are taken from High Knob residential taps. It is possible that lead levels at your home may have elevated lead or copper levels based on a number of factors, including but not limited to the presence of lead-based solder, lead or copper pipe or fixtures in your residence, and seasonal changes in water acidity. If you are concerned about elevated lead or copper levels in your home's water, flush your tap for 30 seconds to two minutes before using tap water. You may also wish to have your water tested. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

<sup>2</sup> Copper is an essential nutrient, but some people who drink water that contains copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water-containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

**VIOLATION INFORMATION**

**Water Quality and Reporting:**

We are full compliance with all water quality and reporting requirements and no violations occurred during the calendar year 2005.

**Monitoring:**

Only one monitoring violation occurred during calendar year 2005. In December 2005, we did not collect the required routine water sample during the month. One sample was required and none was submitted. The duration of this violation was one month and the one required routine water sample was collected and submitted in January 2006.

High Knob Utilities, Inc. prepared this Drinking Water Quality Report with the assistance and approval of the Virginia Department of Health (VDH). Please call us at 540-635-6131, or email us at [hkoffice@earthlink.net](mailto:hkoffice@earthlink.net), if you have questions.

Signature: \_\_\_\_\_

Dan Althouse  
Water Operator, HKUI

Date: \_\_\_\_\_