



# Water Quality Report 2010

## Water System improvements nearly complete

Improvements to the Northwest Regional Water system, which serves Beaver Creek City, Township and portions of Sugar Creek Township are nearly complete. Additional wells have been added to the system, improvements have been made to the distribution system, and the expansion of the water treatment plant is nearly complete. The plant improvements will increase water treatment capacity from 5 million gallons per day (mgd) to 10.5 mgd.

The County continues to seek additional sources of water in anticipation of future

growth. Officials are also working to meet the recommendations of the Northwest Regional Master Plan while keeping expenditures at a minimum.

With the system improvements, the County hopes to avoid asking water customers to use the odd-even watering practices that have been in place the last few years. The improved water system should be able to meet demand. However, even with these improvements are completed, responsible water use is prudent. Some helpful tips:

**Know how much.** Put measuring cups in various places around your lawn and run the sprinklers for 15 minutes. This will give you an idea of how much water the grass is getting and where.

**Waste not, want not.** The greatest waste of water comes from applying too much, too often. Try splitting the watering time into shorter periods.

**Watch the clock.** Water between 5 a.m. and 10 a.m.

**Adjust the system to the season.** Adjust your irrigation system as the seasons and weather change.

### Contact us

Greene County  
Sanitary Engineering Department  
667 Dayton-Xenia Road  
Xenia, OH 45385  
Phone:  
(937) 562-7450  
Greene County's  
Web site:  
[www.co.greene.oh.us](http://www.co.greene.oh.us)

### Other Contacts

Greene County  
Commissioners  
(937) 562-5006

Safe Drinking  
Water Hotline  
(800) 426-4791

## You can participate in water decisions

The Greene County water systems are operated by the Greene County Board of County Commissioners through the Sanitary Engineering Department, 667 Dayton-Xenia Road, Xenia, Ohio 45385.

Greene County Commissioners meet at least weekly in the Commission Chambers, 35

Greene Street, Xenia. For more information on their schedule, please call the Commission Office at (937) 562-5006.

In addition, the Water/Wastewater Advisory Committee meets quarterly. The Committee is made up of representatives of the communities served by Greene

County's water and sewer system. Public participation in the group is welcome. Please call the Sanitary Engineering Department at (937) 562-7450 to obtain a schedule and register for the meeting.

For more information, call Sanitary Engineering at (937) 562-7450.

## Terms Defined

Definitions of some terms contained within this report:

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in the drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Contaminant Level (MCL):** The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Parts per million (ppm) or milligrams per liter (mg/l)** are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days. **Parts per billion (ppb) or micrograms per liter (ug/l)** are also units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

**Picocuries per liter (pCi/L):** A common measure of radioactivity

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

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

## Sources of drinking water

The sources of drinking water include wells, rivers, lakes, streams, ponds, reservoirs, and springs.

In Greene County, the source of drinking water is wells that bring groundwater to the surface.

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: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) 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; (C) Pesti-

cides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; (E) 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.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants.

The presence of contaminants does not neces-

sarily 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 (1-800-426-4791).

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 infection. 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 the Safe Drinking Water Hotline (1-800-426-4791).

## Sources of Greene County water

Greene County has a current, unconditional license to operate our water system. The Northwest Regional Water Treatment Plant serves the Beavercreek Community, and extends into Xenia Township, parts of Kettering, Sugar-creek, and Bath Townships to serve the Career Center and Country Club Estates. It receives water from three wellfields, which all draw water from the Little Miami River Buried Valley Aquifer.

The wellfields are located

on Beaver Valley Road, Shakertown Road and Orchard Lane.

The City of Xenia also uses the Little Miami River Buried Valley Aquifer. Greene County purchases water from Xenia for residents in Cedarville, Shawnee Hills, and Wilberforce.

The Southwest Regional Water Treatment Plant serves residents in Sugar-creek and Spring Valley Townships. The water source is the Little Miami River Buried Valley Aquifer,

with the wellfield located off S.R. 42.

Some residents on the western side of Beavercreek receive their water from the City of Dayton, which uses the Great Miami Buried Valley Aquifer as its water source.

A few residents on the north side of Beavercreek receive their water from the City of Fairborn, which uses the Mad River Buried Valley Aquifer as its main water source.

## FAQs

The rules governing Consumer Confidence reports do not address the issues of fluoride content or water hardness, but because these are some of the most frequently asked questions about our water, we are including these in the report.

The fluoride content of Greene County's raw (untreated) water is 0.3 parts per million. In the finished (treated) water, the content is 1.0 parts per million. State law requires the addition of fluoride to water for larger systems. No fluoride is added to the water at the Southwest Regional Treatment Plant.

The chlorine content of the finished water is 1.3 parts per million, except at Southwest Regional, where it is 1.0 parts per million.

The pH of the finished water is 7.55. A pH of 7.00 is neutral; anything above that is considered base, anything below that is acidic.

The water at Northwest Regional has 27 grains of hardness. The Eastern Regional water (including Shawnee Hills, Cedarville, and Wilberforce) has 25 grains of hardness and the Southwest Regional water has 15-18 grains of hardness.

## Risk factors explained

The following substances are found in our water, normally at levels below the action levels. There are some risk factors that could be involved with even low levels of these substances.

### A. Arsenic:

EPA has issued rules regarding the drinking water standard for arsenic. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations.

EPA continues to research the health effects of low levels of arsenic which is a mineral

known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

### B. Nitrate:

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months

of age. High nitrate levels in drinking water can cause blue baby syndrome. High nitrate levels can also increase the risk of a particular kind of anemia in pregnant women. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant or you are pregnant, you should ask for advice from your health care provider.

Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

## Avoiding exposure to lead

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.

Greene County 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 <http://www.epa.gov/safewater/lead>.

## Wellfield susceptibility

The Ohio EPA has determined that the aquifers that serve the Greene County Northwest Regional wellfield have a moderate susceptibility to contamina-

tion and one serving the Southwest Regional wellfield has a high susceptibility. This does not mean that the wellfields are or will become contaminated,

just that conditions are such that the ground water could be impacted by contaminants unless we continue protective measures.

2010 report 2009 data

Greene County Sanitary Engineering - Division of Water Supply and Treatment

Regulated Substance	Northwest Regional WTP 2903512				Southwest Regional WTP 2903912				Eastern Regional WTP 2906103				Greene County/Dayton 2900803 Entrada		Greene County/Dayton 2904203 Clys		Greene County/Dayton 2904103 Swigart		Kittridge/Dayton 2905003		Possible Source of Contamination	
	Highest Level Allowed (MCL)	Ideal Goals (MCLG)	Violation	Highest Level Detected	Range of Detection	Violation	Highest Level Detected	Range of Detection	Violation	Highest Level Detected	Range of Detection	Violation	Highest Level Detected	Range of Detection	Violation	Highest Level Detected	Range of Detection	Violation	Highest Level Detected	Range of Detection		Violation

- Regulated at the Treatment Plant

Fluoride (ppm)	4	4	-	1.28	0.64 - 1.28	-	-	-	-	1.82	0.81 - 1.82	-	-	-	-	-	-	-	-	-	-	-	-	natural geology/supplement
Nitrate (ppm)	10	10	-	1.11	0.18 - 1.11	-	3.18	N/A	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	fertilizer runoff/natural geology
Radium 228 (pCi/l)	5	0	-	3 <sup>2</sup>	2 - 3 <sup>2</sup>	-	1 <sup>2</sup>	N/A	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	natural deposits
Arsenic (ppb)	10	0	-	8.66	7.02 - 8.66	-	-	-	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	natural deposits

- Regulated at the Customer's Tap

Lead (ppb) <sup>1</sup>	AL=15	0	-	5.7 <sup>2</sup>	<5 - 21 <sup>2</sup>	-	<5 <sup>3</sup>	<5 - 5.9 <sup>3</sup>	-	<5	ND	-	<5 <sup>2</sup>	ND	-	<5 <sup>2</sup>	ND	-	<5 <sup>2</sup>	ND	-	<5 <sup>2</sup>	ND	corrosion of household plumbing materials					
Copper (ppb) <sup>1</sup>	AL=1300	1300	-	176 <sup>2</sup>	<50 - 301 <sup>2</sup>	-	421 <sup>3</sup>	50 - 794 <sup>3</sup>	-	852.5	13 - 1040	-	54.5 <sup>2</sup>	<30 - 56.6 <sup>2</sup>	-	<50 <sup>2</sup>	<30 - 37.7 <sup>2</sup>	-	57.1 <sup>2</sup>	<30 - 62.8 <sup>2</sup>	-	<50 <sup>2</sup>	ND						
Number of samples					30				10				20				10				5				5				
# samples over the action level					0				0				0				0				0				0				

- Regulated in the Distribution System

Chlorine (ppm)	MRDL - 4	MRDLG - 4	-	1.27 <sup>4</sup>	0.2 - 2.1		0.57 <sup>4</sup>	0.2 - 1.5		0.63 <sup>4</sup>	0.2 - 1.5		0.75 <sup>4</sup>	0.2 - 0.8		1.04 <sup>4</sup>	0.2 - 1.6		1.05 <sup>4</sup>	0.2 - 1.3		0.78 <sup>4</sup>	0.2 - 1.4	water additive to control microbes
			-	Yearly Running Average									Yearly Running Average							Yearly Running Average			Yearly Running Average	
Trihalomethanes (ppb)	80	0	-	41.75	12.14 - 74.48	-	11.52	N/A	-	39.12	N/A	-	31.85	24.67 - 41.52	-	26.48	23.8 - 29.59	-	29.58	23.89 - 35.62	-	29.54	23.48 - 33.50	by-products of chlorination
Haloacetic Acids (ppb)	60	0	-	7.43	<6 - 16.89	-	3.85	N/A	-	4.47	N/A	-	4.07	2.32 - 5.20	-	4.41	2.88 - 5.38	-	4.23	<6 - 6.53	-	3.99	<6 - 6.24	

Unregulated Compounds (large systems required to monitor)

Bromodichloromethane (ppb)	-	-	-	12.55	3.98 - 22.83	-	3.28	N/A	-	9.53	N/A	-	10.21	8.0 - 13.4	-	8.51	7.62 - 9.35	-	9.54	7.63 - 11.18	-	9.40	7.37 - 10.9	by-products of chlorination
Bromoform (ppb)	-	-	-	2.61	0.84 - 6.04	-	<0.500	N/A	-	0.61	N/A	-	3.04	2.6 - 3.4	-	2.66	2.24 - 3.07	-	2.72	2.11 - 3.24	-	2.89	2.2 - 3.46	
Chloroform (ppb)	-	-	-	16.36	3.08 - 31.9	-	6.12	N/A	-	24.35	N/A	-	8.88	5.3 - 14.3	-	7.21	5.76 - 8.76	-	8.44	5.43 - 11.52	-	8.03	4.27 - 11.72	
Dibromochloromethane (ppb)	-	-	-	10.41	3.91 - 17.8	-	2.12	N/A	-	4.63	N/A	-	9.72	8.4 - 11.0	-	8.09	7.61 - 8.97	-	8.88	8.31 - 9.68	-	9.23	8.68 - 9.93	
Dibromoacetic Acid (ppb)	-	-	-	2.61	1.53 - 3.70	-	<1.0	N/A	-	<1.0	N/A	-	2.36	1.9 - 2.7	-	2.39	1.91 - 2.73	-	2.79	1.93 - 3.58	-	2.51	1.65 - 3.00	
Dichloroacetic Acid (ppb)	-	-	-	5.29	2.024 - 10	-	2.27	N/A	-	1.50	N/A	-	2.3	2.0 - 2.5	-	2.61	2.09 - 2.88	-	2.84	2.74 - 2.95	-	2.81	2.34 - 3.24	
Trichloroacetic Acid (ppb)	-	-	-	2.71	1.24 - 4.56	-	1.58	N/A	-	2.97	N/A	-	<1	N/A	-	<1	N/A	-	<1	N/A	-	<1	N/A	

1 - 90th percentile value - used to determine compliance as per USEPA

2 - 2008 data

3 - 2007 data

4- Quarterly running average

\* - see Xenia CCR

AL - action level

N/A - not applicable

ND - not detected

< - less than

MRDL - Maximum Residual Disinfectant Level - 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.

MRDLG - Maximum Residual Disinfectant Goal - 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.

WTP - Water Treatment Plant

WS - Water Supply

MCL - Maximum Contaminant Level

MCLG - Maximum Contaminant Level Goal

PWS - Public Water Supply

"Under the Stage 2 Disinfectants/Disinfection Byproducts Rule (D/DBPR), our public water system was required by USEPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE), and is intended to identify locations in our distribution system with elevated disinfection byproduct concentrations. The locations selected for the IDSE may be used for compliance monitoring under Stage 2 DPBR, beginning in 2012.

Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). USEPA sets standards for controlling the levels of disinfectants and disinfection byproducts in drinking water, including both THMs and HAAs."