



# 2010 *Water Quality Report*

City of Newark  
Division of Water and Wastewater  
City of Newark Water System consumer information

City of Newark  
Division of Water and Wastewater  
34 S. Fifth St.  
Newark, OH 43055

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The Water Quality report is an annual report required of every Community Public Water System since October, 1999. This annual report is a snapshot of the countless efforts and test results over this last year. Upon discovering any violation of a contaminant standard, separate public notification would have been required.

## Our Mission

*To enhance the quality of life in Newark by providing essential services to the community and protecting the water environment.*

The Newark Water plant analyzes over 100 process and quality control tests every day. The NWTP employees are certified by the Ohio Environmental Protection Agency Laboratory certification section, Division of Environmental Services. In addition, we contract with EPA-approved laboratories to analyze more complex, required contaminants such as SOCs, VOCs, inorganics and disinfection by-products.

## History Of Our Water System

Newark's water system has a long and storied history. From the Newark Water Company's inception in 1886 through to the present day, The Newark Water Treatment Plant has played a key role in the City's progress. While water treatment regulations and technology have changed over the years, the City's administrators and treatment plant operators have remained dedicated to providing customers with the highest quality water using the most cost effective measures.

Today the City of Newark owns and operates a state-of-the-art surface water treatment plant. The Class IV (highest in the State) treatment plant is designed to clarify, soften, fluoridate and disinfect water from the North Fork of the Licking River. The treatment plant has all the modern features of telemetry and automation (SCADA system) that continually monitor flows, chemical dosages and all essential processes. Additionally, Newark was one of the first water systems in the entire nation to install UV (ultraviolet light) disinfection for the purpose of meeting the most stringent pending Federal and State regulations. The City of Newark Water Treatment Plant maintains interconnections with the City of Heath and the Village of Granville for emergency water supply. Neither connection was used in 2009.

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## Where Our Water Comes From

The Newark Water Treatment Plant is located in the north end of Newark at 164 Waterworks Road. Raw water is drawn from the North Fork of the Licking River thus the classification of a surface water treatment plant. The North Fork is composed of a drainage area, or water shed, of approximately 75 square miles.

In cooperation with the Ohio EPA, a source water assessment has been completed. For purpose of source water assessments, in Ohio all surface waters are considered to be susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens which may arrive at the water intake with little warning or time to prepare. The purpose of this assessment is to identify where and how the City of Newark's source waters are at risk of contamination.

### The Report:

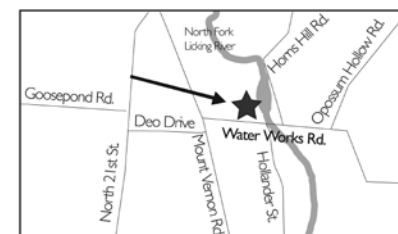
- Identifies the drinking water source-protection area.
- Examines the characteristics of the watershed and the water quality.
- Inventories the potential contaminant sources within that area.
- Discusses the susceptibility of the system to contamination.

*The report is available for review by calling the Water Plant at (740) 670-7960.*

**Licence to Operate:** We have a current, unconditioned licence to operate our water system.

## 2010 Water Plant & Distribution System Quick Facts

Design 15 MGD (*million gallons per day*)  
Production 8.6 MGD  
Active Customers 18,750  
Miles of water main 195  
Fire Hydrants 1,896  
Hardness 120 mg/l – 7 grains/gallon  
Storage tanks 6.1 MG  
Booster stations 3



For comments or questions regarding the Water Quality Report, plant processes, plant tours or how to participate in decisions regarding our drinking water, call:

Water Treatment Superintendent Shawn Wagner at (740) 670-7965.  
Water Treatment Asst. Superintendent Vaughn Klingler at (740) 670-7966.

Written comments can be addressed to: City of Newark  
Division of Water and Wastewater  
34 South Fifth Street  
Newark, Ohio 43055

*e-mail:* [wateradm@newarkohiowater.net](mailto:wateradm@newarkohiowater.net)  
*Web:* [www.newarkohiowater.net](http://www.newarkohiowater.net)

*Newark City Council meets at City Hall, 40 West Main St.,  
at 7p.m. the first and third Mondays of each month.*

## Sources Of Contamination

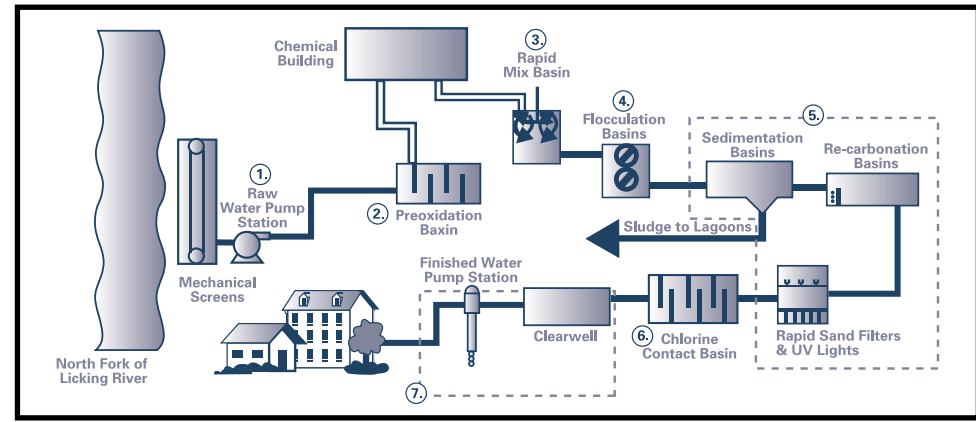
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include the following:

- Microbial contaminants, such as viruses and bacteria, which may come from wastewater treatment plants, septic system, 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, urban storm water runoff and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production. The contaminants also can come from gas stations, urban storm water runoff and septic system;
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.
- 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. The Newark Water System 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 or at <http://www.epa.gov/safewater/lead>.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency prescribes regulations that 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 necessarily indicate that water poses a health risk. More information about contaminants and potential health effect may be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.



## How The Treatment Works



- Raw water is withdrawn from the North Fork of the Licking River through mechanical screens located along the river bank. The mechanical screens prevent fish, leaves and other suspended debris from entering the pumping station. Four raw water pumps deliver the screened water to the plant processes.
- Raw water first enters the preoxidation basin, where treatment is initiated. Chemicals such as potassium permanganate, chlorine and powdered activated carbon may be applied to the raw water flow for oxidation or adsorption of taste and odor-causing contaminants and other trace organic impurities.
- Treated water then enters the rapid-mix basin, where the chemical treatment is continued for softening and clarification. Turbine-type mixers are provided to rapidly disperse the chemicals into the water supply. Lime is used to raise the pH levels and cause the hardness constituents to be precipitated. Ferric sulfate is utilized as a coagulant to enhance the removal of the hardness constituents and the turbidity (fine suspended matter) from the water supply.
- The chemically treated water supply then enters the Flocculation Basins, Paddle-type mixers gently mix the water to promote the completion of the chemical reactions and the formation of settleable solids.
- From these basins, water travels to three parallel sedimentation basins, where a quiescent period is provided for settling and removal of suspended solids. The settled water supply then flows to the Recarbonation Basins where carbon dioxide is diffused into the water to readjust the pH back down to a lower level. Clarification is then completed in Rapid Gravity Sand Filters with the removal of any remaining fine colloidal/suspended solids.
- After filtration, the water is disinfected with ultraviolet light and sodium hypochlorite in the chlorine contact basin. The disinfected water is then fluoridated before flowing to the Clearwell, which provides storage to satisfy pumping demands.
- Finally, the finished water supply flows to the finished water pump station, where four pumps serve the city's distribution system.

## If You Have Special Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised people, such as people with cancer undergoing chemotherapy, people 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. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

	Contaminant + Units	MCLG	MCL	Level Found	Range of Detection	Violation	Sample Year	Typical Source of Contaminants
Microbiological Contaminants	Total Coliform,	0	5%	0%	0.00 - 0.00	NO	2010	Naturally present in the environment
	Turbidity N.T.U.,	NA	TT	0.90	0.10 - 0.90	NO	2010	Soil Runoff
	Giardia ¶¶	NA	TT	6	0.00 - 6.00	NO	2010	Human and Animal Fecal Waste (found in source water)
Synthetic Organic Contaminants including pesticides and herbicides	Atrazine (µg/L)	3	3	0.33	0.30 - 0.38	NO	2010	Herbicides Runoff
Volatile Organic Contaminants (unregulated contaminants)	*Chloroform (µg/L)	NA	NA	67.20	NA	NO	2010	By-Product of Drinking Water Chlorination
	*Bromodichloromethane	NA	NA	8.58	NA	NO	2010	By-Product of Drinking Water Chlorination
	*Dibromochloromethane	NA	NA	1.13	NA	NO	2010	By-Product of Drinking Water Chlorination
Disinfection By-products	THM's (µg/L)	NA	80	56.74	27.96 - 93.41	NO	2010	By-Product of Drinking Water Chlorination
	HAA5's (µg/L)	NA	60	14.935	8.66 - 19.82	NO	2010	By-Product of Drinking Water Chlorination
	# TOC	NA	TT	1.35	1.00 - 3.10	NO	2010	Naturally present in the environment
	Total Chlorine Residual (mg/L)	4	4	1.44	0.73 - 1.63	NO	2010	Water Additive to Control Microbes
Inorganics	Nitrates (mg/L)	10	10	5.37	0.11 - 5.37	NO	2010	Runoff from Fertilizer use, Leaching from Septic Tanks, Sewage, Erosion of Natural Deposits
	Fluoride (mg/L)	4	4	0.97	0.54 - 1.38	NO	2010	Water additive to promote strong teeth, Discharge from Fertilizer and Aluminum
	Barium (mg/L)	2	2	0.005	NA	NO	2010	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
	Lead (ppb)	0	AL=15	<2.0	<2.0 NA 13.00	NO	2008	Corrosion of household plumbing systems.
	Copper (ppm)	1.3	AL=1.3	0.003	<.005 NA 0.016	NO	2008	Erosion of natural deposits; Runoff from glass and electronics production waste
IDSE	TTHM (ug/l)	NA	80	32.64	11.77 - 32.64	N/A	2008	By-Product of Drinking Water Chlorination
	THAA (ug/l)	NA	60	12.70	8.02 - 12.70	N/A	2008	By-Product of Drinking Water Chlorination

¶¶ Cryptosporidium ("Crypto") is a microscopic organism that, when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. Crypto comes from animal waste in the watershed and may be found in our source water. Crypto is eliminated by using a multi-barrier water treatment process including coagulation, sedimentation, softening, filtration and disinfection (chlorination and ultraviolet radiation). All part of Newark's treatment. In fact the City of Newark was the first in the State of Ohio to use UV for water treatment. 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 at 1 (800) 426-4791. The City of Newark Water Treatment plant has detected amounts of crypto in the source water.

The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of TOC removal requirements.

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is (0.3 NTU) in 95% of the daily samples and shall not exceed 5 NTU at any time. As reported above the City of Newark Water Treatment Plant highest recorded turbidity results for 2010 was 0.90 NTU and the lowest monthly percentage of samples meeting the turbidity limits was 100%.

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

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

Parts per million (ppm) or milligrams per liter (mg/L): 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 (µg/L): Units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Maximum Residual Disinfectant Level Goal (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 (MRDL): The highest level of a disinfectant allowed in drinking water. The addition of a disinfectant is necessary for control of microbial contaminants.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment of 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.

The "<" symbol: a Symbol which means less than. A result of <5 means that the lowest level that could be detected is 5 and the contaminant in that sample was not detected.

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

IDSE - Initial Distribution System Evaluation - is for establishing future regulatory monitoring sites (12 month study beginning January 2008)