

MIDDLETOWN WATER QUALITY REPORT

19 West Green Street, Middletown, DE 19709

PWSID – DE0000614

Report Created May 2009

Please find and review the enclosed annual water quality report for 2008. We are pleased to report that Middletown's water meets or exceeds all of the standards for reportable substances in drinking water as set by the State of Delaware. Please note that substances such as iron, chloride and sodium are commonly found in drinking water. At trace levels, these naturally occurring substances are not harmful. This report shows at what levels these substances were found during tests conducted from January 1, 2008 – December 31, 2008, unless otherwise specified. If you have any questions about this report or the quality of your water, please feel free to contact the Water Department at (302) 378-5142, or please attend any of our regularly scheduled meetings held at 8:00 P.M. the first Monday of each month at Town Hall.

The water serving your home comes from the Upper Potomac and Magothy aquifers via 4 wells ranging in depth from 285 feet to 846 feet. These aquifers are confined and protected from the influence of past farming activities and saltwater intrusion. DNREC's source water assessment plan has been completed for nearly all community water systems. Copies can be obtained by contacting the Water Department at the phone number listed above.

All sources of drinking water (whether a river, lake, spring, well, or pond) are subject to potential contamination by substances that are naturally occurring or man made. As water travels through the ground or over the surface of the land, it can dissolve naturally occurring substances, including radioactive substances. Additionally, some substances result from the presence of animals or human activity. These substances (both natural and man-made) can be microbes, inorganic or organic chemicals, pesticides/herbicides and radioactive substances. All 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 the 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 at 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 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 mentioned above.

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. Food and Drug Administration regulations established limits for contaminants in bottle water, which must provide the same protection for public health. In the table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

90th PERCENTILE – The eighteenth (18th) highest lead/copper reading (out of a total of 20), used to determine compliance with the Lead and Copper Rule.

ACTION LEVEL - The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.

MAXIMUM CONTAMINANT LEVEL - the "Maximum Allowed" (MCL) is 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 - the "Goal" (MCLG) is 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.

NON-DETECTS (ND) - laboratory analysis indicates that the constituent is not present.

NOT REGULATED (N/R) - no MCL identified because this substances is unregulated.

PARTS PER BILLION (PPB) - one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

PARTS PER MILLION (PPM) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parameter	Unit of Measure	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Highest Level Detected	Annual Range	Major Sources
Inorganic Contaminants						
Barium (2007 Data)	ppb	2000	2000	139	122 – 135	Erosion of natural deposits.
Chromium (2007 Data)	ppb	100	100	4.9	3.8 – 4.9	Erosion of natural deposits.
Fluoride	ppm	2	2	6.0 (see note 1)	nd – 6	Water additive used to promote strong teeth.
Nitrate	ppm	10	10	0.6	nd – 0.6	
Disinfection/Disinfection By-Products						
Chlorine, Free	ppm	4 (MRDL)	4 (MRDLG)	2.1	nd – 2.1	Disinfectant used in drinking water industry.
Haloacetic Acids, total	ppb	60	0	3.3	nd – 3.3	By-product of drinking water chlorination.
Dichloroacetic Acid	ppb	n/r		2	nd – 2	
Trichloroacetic Acid	ppb	n/r		1.3	nd – 1.3	
Trihalomethanes, total	ppb	80	0	4.5	nd – 4.5	By-product of drinking water chlorination.
Bromodichloromethane	ppb	n/r		0.8	nd – 0.8	
Chloroform	ppb	n/r		3.7	nd – 3.7	
Unregulated Contaminants						
Alkalinity, Total	ppm	n/r		112	76 – 112	
Chloride	ppm	n/r	250	4.6	3.5 – 4.6	
Hardness, Total	ppm	n/r		22.4	21.9 – 22.4	
Iron	ppb	n/r	300	290	160 – 290	
pH, Field	0-14 scale	n/r		7.9	6.9 – 7.9	
Sodium	ppm	n/r		39	27 – 39	
Solids, Total Dissolved	ppm	n/r	500	146	124 – 146	
Sulfate	ppm	n/r	250	10	8 – 10	
Lead & Copper						
		Action Level		90 th Percentile		
90th Percentile Lead (2006 Data)	ppb	15	0	3	nd - 4	Corrosion of household plumbing systems, erosion of natural deposits.
Number of Sites Exceeding Lead Action Level				0		
90th Percentile Copper (2006 Data)	ppb	1,300	0	407	32 - 547	Corrosion of household plumbing systems, erosion of natural deposits.
Number of Sites Exceeding Copper Action Level				0		
Microbiological Contaminants						
Total Coliform		Violation?				
Highest number of positive samples in any one month		Three (3) in September Negative results in remaining 98% of monthly samples collected. 17 coliform samples per month are taken.		YES (see note 2)	Naturally present in the environment. All resamples absent for bacteria	

Note 1: High fluoride reading related to a short-term problem with fluoride pump. Pump was repaired and fluoride levels returned to normal levels.

Note 2: A public notice was issued to Middletown, on 9/29/08, for a violation of the Total Coliform Rule. Chlorine residuals were increased in order to disinfect the water and the notice was delivered to residents within the affected areas. The notice was removed on 11/1/08 after resampling indicated the absence of bacteria. Additionally, monitoring and reporting violations were issued to the Middletown Water Department in March and August of 2008 due to an incorrect amount of repeat samples being collected following a routine positive sample. Four (4) repeat samples must be collected for each positive bacteria sample.

Important information concerning coliform bacteria: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Contaminants tested for, but not found.

Contaminants tested for, but not found.			
		Synthetic Organic Contaminants (Pesticides/Herbicides/Insecticides)	
Inorganic Contaminants		1,2-Dibromo-3-Chloropropane	Benzo(g,h,i)perylene
Antimony	Nitrite	1,2-Dibromoethane	Benzo(k)fluoranthene
Arsenic	Nitrate/Nitrite	2,4,5-TP (Silvex)	Bis(2-ethylhexyl) phthalate
Beryllium	Selenium	2,4-D	Butachlor
Cadmium	Thallium	2,4-dinitrotoluene	Butylbenzylphthalate
Mercury	Turbidity	2,6-dinitrotoluene	Carbaryl
Nickel		2-Methyl Naphthalene	Carbofuran
		3-Hydroxycarbofuran	Chrysene
		4,4'-DDE	Dalapon
		Acenaphthene	Di(ethylhexyl)adipate
		Acenaphthylene	Dibenzo(a,h)anthracene
Radiological Contaminants		Acetchlor	Dibenzofuran
Gross Alpha Emitters		Acifluorfen	Dicamba
Gross Beta Emitters		Alachlor	Dieldrin
		Aldicarb	Diethylphthalate
Disinfection By-Product Contaminants		Aldicarb Sulfone	Dimethyl phthalate
Bromochloroacetic Acid		Aldicarb Sulfoxide	Di-n-butylphthalate
Bromoform		Aldrin	Dinoseb
Dibromoacetic Acid		Anthracene	Endrin
Dibromochloromethane		Atrazine	Eptam (EPTC)
Monobromoacetic Acid		Benzo(a)anthracene	Ethylene Dibromide
Monochloroacetic Acid		Benzo(a)pyrene	Fluoranthene
		Benzo(b)fluoranthene	Fluorene
			Heptachlor
			Heptachlor Epoxide
			Hexachlorobenzene
			Hexachlorocyclopentadiene
			Indeno(1,2,3-cd)pyrene
			Lindane
			Methiocarb
			Methomyl
			Methoxychlor
			Metolachlor
			Metribuzin
			Molinate
			Oxamyl (Vydate)
			PCBs
			Pentachlorophenol
			Phenanthrene
			Picloram
			Propachlor
			Propoxur
			Pyrene
			Simazine
			Terbacil
			Toxaphene
Volatile Organic Contaminants			
1,1,1,2-Tetrachloroethane	2,2-Dichloropropane	Chloroethane	Naphthalene
1,1,1-Trichloroethane	2,4,5-trichlorophenol	Chloromethane	n-Butylbenzene
1,1,2,2-Tetrachloroethane	2-Butanone (MEK)	cis-1,2-Dichloroethene	n-Propylbenzene
1,1,2-Trichloroethane	2-Chloroethylvinyl Ether	cis-1,2-Dichloroethene	o-Xylene
1,1-Dichloroethane	2-Chlorotoluene	cis-1,3-Dichloropropene	sec-Butylbenzene
1,1-Dichloroethene	2-Hexanone	Dibromomethane	Styrene
1,1-Dichloropropene	3-chloro-1-propene	Dichlorodifluoromethane	tert-Butylbenzene
1,2,3-Trichlorobenzene	4-Chlorotoluene	Ethyl methacrylate	Tetrachloroethene
1,2,3-Trichloropropane	4-Isopropyltoluene	Ethylbenzene	Tetrahydrofuran (THF)
1,2,4-Trichlorobenzene	Acetone	Hexachlorobutadiene	Toluene
1,2,4-Trimethylbenzene	Acrylonitrile	Iodomethane	tr-1,2-Dichloroethene
1,2-Dichlorobenzene	Benzene	Isopropylbenzene	tr-1,3-Dichloropropene
1,2-Dichloroethane	Bromobenzene	m,p-Xylene	trans-1,4-Dichlorobutene
1,2-Dichloropropane	Bromochloromethane	Methyl Isobutyl Ketone (MIBK)	Trichloroethene
1,3,5-Trimethylbenzene	Bromomethane	Methyl methacrylate	Trichlorofluoromethane
1,3-Dichlorobenzene	Carbon Disulfide	Methylene Chloride	Vinyl acetate
1,3-Dichloropropane	Carbon Tetrachloride	Methyl-t-butyl ether (MTBE)	Vinyl chloride
1,4-Dichlorobenzene	Chlorobenzene		