



2008 Drinking Water Quality Report

City of Dover Department of Public Utilities
860 Buttner Place, Dover, Delaware 19904

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As consumers become more health conscious, they require more information to help them make informed decisions about the products they consume. The Safe Drinking Water Act was amended, in 1996, to ensure consumers are provided with an Annual Water Quality Report containing this important information about their drinking water. The City of Dover is pleased to present our Annual Water Quality Report for the 2008 calendar year. Our goal as a public water purveyor is to provide a healthy and dependable supply of drinking water to our customers, many of which are family and friends of the dedicated people entrusted with the production, treatment, distribution and sampling of our water each and every day of the year. We want our customers to understand the continuous efforts we are making to improve the City's water treatment process and to protect our customers, families and friends, as well as our precious water resources. The City of Dover is committed to providing the highest quality drinking water possible.

Drinking water can come from many sources. 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 materials and, in some cases, radioactive materials, and can pick up substances resulting from the presence of animals or from human activity. **The City of Dover's water supply system uses groundwater as its source of supply. Our public drinking water wells draw water from the Cheswold, Piney Point, and Columbia Aquifers.** In order to ensure that tap water is safe to drink, the EPA (Environmental Protection Agency) 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 bottled water which must provide the same protection for public health.

This water quality report identifies some of the components of the City's drinking water. If you have any questions concerning the information contained in this report, please contact **Ms. Sharon J. Duca, P.E., Water/Wastewater Manager, or Mr. John Sisson, Water Production Supervisor, at (302) 736-7070.** Interested customers can also attend any of our regularly scheduled City Council meetings. These meetings are held on the second and fourth Mondays of each month in the Council Chambers of City Hall, 15 E. Loockerman Street, Dover, Delaware. The open forum segment of these meetings begins at 7:15 p.m. As a public water purveyor, we want our customers to be informed about the quality of their water supply and the dedicated efforts of the City's water utility.

The **City of Dover** routinely monitors for various constituents in your drinking water in accordance with all Federal and State laws. An average of over 1,800 routine analyses are performed every month on samples drawn every day from various locations throughout the city. A table has been included in this report which shows the results of the City's required monitoring for the period of **January 1st thru December 31st, 2008**. As indicated previously, water which travels over land or underground can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of these substances or contaminants. It's important to remember that the mere presence of contaminants does not necessarily indicate that the water poses a health risk. 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. More information about contaminants and potential health effects as well as EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

This report contains the following terms and/or abbreviations which you may not be familiar with. To help you better understand these terms we have provided some basic definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million or one milligram per liter corresponds to one minute in two years or a single penny in \$10,000⁰⁰.

Parts per billion (ppb) or Micrograms per liter (µg/l) - one part per billion or one microgram per liter corresponds to one minute in two millennia or a single penny in \$10,000,000⁰⁰.

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

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

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

Maximum Contaminant Level Goal (MCLG) - the "Goal" 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.

Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a 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 contamination.

Lead & Copper Rule: In September 2006, the City of Dover obtained 33 water samples from our customers to comply with the requirements of the Lead & Copper Rule. These samples were analyzed by an independent private laboratory. Our results for lead indicated the 90th percentile sample had 4 ppb of lead present in the sample. This result is below the action level of 15 ppb for lead. Our results for copper indicated the 90th percentile sample had 0.186 ppm of copper present in the sample. This result is below the action level of 1.3 ppm for copper. Since our results were below the action level for both substances, no further action was required. The City of Dover will perform another round of sampling to comply with this rule in the summer of 2009.

Nitrates & Nitrites: While the City of Dover did not exceed the maximum contaminant levels for each of these particular contaminants, the significant agricultural uses in the watershed require us to pay special attention to these levels. Nitrate in drinking water at levels above 10 ppm is a health risk for Infants of less than six (6) months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from you health care provider.

As indicated in the following table, the City's water system had no violations for Total Coliform in the 2008 calendar year. Coliforms are bacteria that are naturally present in the environment and are used as a marker which may indicate that other, potentially harmful, bacteria may be present. We're proud that your drinking water currently meets or exceeds all Federal and State requirements.

2008 TEST RESULTS

Contaminant	Violation Yes/No	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Total Coliform Bacteria	No	Absent (0)	Present / Absent	0	Total Coliform: presence in 5% of monthly samples.	Naturally present in the environment.
Inorganic Contaminants* (Data collected in 2007 & 2008)						
Arsenic (As)*	No	<0.5 – 4.7	ppb	n/a	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics wastes.
Barium (Ba) *	No	<0.01 – 0.06	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorine (Cl)	No	0.3 – 3.0	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes.
Chromium (Cr) *	No	1.2 – 16.4	ppb	100	100	Erosion of natural deposits.
Fluoride (F)	No	0.49– 1.24	ppm	2.0	2.0	Erosion of natural deposits; water additive which promotes strong teeth.
Lead (Pb) *	No	<0.5 – 1.2	ppb	0	AL=15	Erosion of natural deposits.
Nickel (Ni) *	No	<0.5 – 2.2	ppb	100	100	Erosion of natural deposits.
Nitrate (NO ₃)	No	<0.3 – 6.9	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks & sewage.
Sulfate (SO ₄)	No	39.4 – 59.0	ppm	250	250	Naturally present in the environment.
Unregulated Inorganic Contaminants						
Iron (Fe)	No	< 50 – 270	ppb	0	300	
Sodium (Na)	No	11 –153	ppm	20	N/A	
Alkalinity	No	45 – 336	ppm	N/A	N/A	
pH	No	6.9 – 8.3		6.5 – 8.5	6.5 – 8.5	
Chloride (Cl ⁻)	No	4.3 – 23.4	ppm	250	250	
Hardness	No	14.3 – 98.5	ppm	N/A	N/A	
Total Dissolved Solids	No	150 – 408	ppm	500	500	
Volatile Organic Contaminants						
TTHM's (Total Trihalomethanes)	No	9.4 – 46.7	ppb	n/a	80	Byproduct of drinking water chlorination.
HAA5's (Total Haloacetic Acids)	No	3.1 – 14.4	ppb	n/a	60	Byproduct of drinking water chlorination.
Radioactive Contaminants* (Data collected in 2007 & 2008)						
Alpha emitters	No	1.1 – 4.7	pCi/l	n/a	15	Erosion of natural deposits.

* Drinking Water Regulations allow us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Data for this compliance period was collected in the 2007 calendar year.

Source Water Assessment: The Division of Public Health, in conjunction with the Delaware Department of Natural Resources and Environmental Control (DNREC) Division of Water Resources, has completed the Source Water Assessment for the public water supply wells for the City of Dover as required under the 1996 amendments to the Safe Drinking Water Act. (Source water assessments for nearly all community water system in Delaware have been conducted.) This assessment has been performed using the methods specified in the State of Delaware Source Water Assessment Plan (DNREC, 1999). Contact the City of Dover Department of Public Utilities' office at 302-736-7070 regarding its availability and how to obtain a copy of this assessment. You may also review it on-line at the following website: <http://www.wr.udel.edu/swaphome> .

Source Water Protection Legislation: The City of Dover adopted its Source Water Protection Ordinance on March 24, 2008, a copy of this ordinance (Appendix B, Article 3, Section 29) can be viewed at <http://www.municode.com/resources>. Kent County is currently working to implement legislation, also designed to protect our most valuable resource at its source, by limiting the use of land in and around areas that have the potential to allow contamination of our water supply.

As sampling technology becomes more sophisticated the ability to detect a wider range of contaminants at lower concentrations is possible, yielding a better picture of the impact of both industrial and residential practices on our water supplies.

The US Environmental Protection Agency (USEPA) utilizes the advances in sampling technology in programs such as the Unregulated Contaminant Monitoring Regulation (UCMR). The purpose of the UCMR program is to determine the occurrence of unregulated contaminants in finished drinking water and use that data in regulatory decision making. The City of Dover participated in the 2001-2005 study and is proud to be able to assist the USEPA with their research by participating in the 2007-2011 study (UCMR2).

The City of Dover staff is also working diligently to improve non-regulated as well as regulated water quality aspects through:

- Treatment system upgrades designed to provide better chemical mixing prior to distribution.
- Piping upgrades designed to minimize chemical reactions with distribution system materials.
- Monitoring equipment designed to provide better control of the treatment chemicals added.
- Development and implementation of a more precise and controlled flushing program.
- Increased monitoring and sampling throughout the distribution system.
- Production system upgrades designed to provide better system reliability.

Until recently, most efforts to improve water quality have focused on detection and removal or treatment of contaminants. It has been easy to take for granted the availability of clean, fresh drinking water. We can easily see that about 70% of the earth's surface is covered by the water so necessary for our very existence. But what we may not realize is that 97% of that water is salt water and undrinkable without very expensive treatment processes, 2% forms the world's glaciers, while only 1% is fresh water that we can use to drink as well as produce power, supply industry, wash our cars, water our lawns, clean our laundry and dishes, etc. As we become more aware of our natural resources and their limits it becomes apparent that we may need to re-evaluate the use and protection of those resources. There is a quote that hangs in the main office for the City of Dover's Water Treatment and Production Division that reads: "We did not inherit this land from our ancestors. We borrow it from our children."

As a society, we must all be conscious and careful of how we dispose of the everyday chemicals that enhance our quality of life. Examples of contaminants that can find their way into our drinking water supply are; de-icing chemicals spread on roadways and sidewalks, fluids leaking from automobiles, many cleaning products disposed of in sanitary and storm sewers, agricultural chemicals used for commercial and residential applications, just to name a few. The most recent to be brought to the attention of the public are pharmaceuticals. Answers to questions about these and other drinking water issues can be found at the American Water Works Association's (AWWA) website <http://www.drinktap.org>. Answers to questions specifically concerned with the proper disposal of pharmaceuticals can be found at http://www.whitehousedrugpolicy.gov/drugfact/factsht/proper_disposal.html.

The City of Dover staff would like to thank our customers for their efforts in helping us make the changes necessary to ensure that we can supply the highest quality drinking water possible for generations to come.