



ANNUAL
WATER
QUALITY
REPORT

Water testing performed in 2009



Presented By:
ATLANTIC CITY MUA

PWS ID#: 0102001

Continuing Our Commitment

The Atlantic City Municipal Utilities Authority (ACMUA) is once again proud to present our annual water quality report. This report covers all testing completed from January 1 through December 31, 2009. We are pleased to tell you that our compliance with all state and federal drinking water laws remains fairly well. As in the past, we are committed to delivering the best quality water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education, while continuing to serve the needs of all our water users. We also continually strive to adopt new and better methods of delivering the best quality drinking water. As regulations and drinking water standards change, it is our commitment to you to incorporate these changes system-wide in an expeditious and cost-effective manner.

Where Does My Water Come From?

The ACMUA's water supply system consists of surface and ground water resources; a water filtration facility that treats raw water from both sources; transmission facilities from the treatment plant to Atlantic City; distribution facilities throughout the city; reservoirs at the surface sources; one standpipe; and two elevated storage tanks in the city. In 2009 the system processed 4,265 million gallons of water for the year, with a maximum daily demand of 15.843 million gallons per day (mgd) during the summer months and an average daily demand of approximately 11.676 million gallons per day. The ACMUA water source comes from two surface water reservoirs (Kuehnle Pond Dam and Doughty Pond Dam) and twelve wells. Ten of these wells are located in the Cohansey Aquifer and two are located in the Kirkwood Aquifer. Well water collected from the well fields is transported to the ACMUA's Water Treatment Plant Facility. The treatment process includes pre-treatment with sodium hypochlorite solution for disinfection, sodium permanganate and poly aluminum chloride addition for turbidity removal, aeration, mixing, settling, and filtration with mixed media including sand, gravel, and granular activated carbon. Post-treatment includes disinfection, pH adjustment with lime, fluoride addition, and corrosion inhibitor chemical addition. After the water is treated at the plant, it is transported to Atlantic City to be used by all our customers.

History of the ACMUA

The Authority came into existence on September 14, 1978, by action of the Board of Commissioners of the City of Atlantic City, who created it under the provisions of the Municipal and County Utilities Law of the State of New Jersey. On January 22, 1980, the Atlantic City Municipal Utilities Authority (ACMUA) acquired the Atlantic City Water Utility and assumed the operation and maintenance of the system.



Since the beginning, the ACMUA's goal has been to produce the highest quality drinking water for all its customers. We are proud of our history of quality service. To maintain our commitment to you, our analysts routinely collect and test water samples every step of the way – from the source waters right to your home – checking purity and identifying potential problems. Our treatment plant is constantly maintained, evaluated, and upgraded to stay abreast of advancements in technology, health science, and government regulations.

Awards

The Atlantic City MUA received a certificate from the New Jersey Department of Environmental Protection's Environmental Stewardship Initiative for its voluntary and protective measures taken to go beyond compliance in an effort to improve the environment and ensure a sustainable future by participating in the Transportation Energy Use Reduction with the purchasing of several hybrid vehicles for company use.

Information on the Internet

For information about your water department, please visit our Web site (www.acmua.org). The U.S. EPA Office of Water (www.epa.gov/watrhme) and Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide information on many issues relating to water resources, water conservation, and public health. Also, the New Jersey Department of Health Web site (www.state.nj.us) provides complete and current information on water issues in New Jersey, including valuable information about our watershed.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).



The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk. 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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include **Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife; **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses; **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems; **Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Questions?

If you have any health concerns relating to the information provided in this report, we encourage you to contact your health care provider. For more information about the contents of this report or for any questions relating to your drinking water, please contact Garth Moyle at (609) 345-3315, ext. 17.

Community Participation

The Atlantic City Municipal Utilities Authority Board of Directors meets every third Wednesday of the month at 10:00 a.m. in the first floor conference room at our offices at 401 N. Virginia Avenue, Atlantic City, NJ.

Lead and Drinking Water

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. Atlantic City Municipal Utilities Authority 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 (800) 426-4791 or at www.epa.gov/safewater/lead.

About Our Violation

In April 2009, the ACMUA was found to have committed a Tier II violation of the Total Coliform Rule when it failed to correctly resample after a total coliform positive sample in its distribution system. As per the New Jersey Department of Environmental Protection, the ACMUA sent all its customers a letter explaining the entire situation on June 3, 2009.

In May 2009, the ACMUA was found to have committed a Tier II violation of the Interim Enhanced Surface Water Treatment Rule when the combined filtered water effluent turbidity exceeded 1 NTU. As per the New Jersey Department of Environmental Protection, the ACMUA sent all its customers a letter explaining the entire situation on June 3, 2009.

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products. Over the past five years, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web at www.Earth911.com to find more information about disposal locations in your area.

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses about 100 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to www.h2oconserve.org, or visit www.waterfootprint.org to see how the water footprints of other nations compare.

Source Water Assessment

The New Jersey Department of Environmental Protection (NJDEP) has prepared Source Water Assessment Reports and Summaries for all public water systems. The table below illustrates the susceptibility ratings for the seven contaminant categories (and Radon) for each source in the system. The table shows the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category.

CONTAMINANT CATEGORY	SUSCEPTIBILITY RATING	TOTALS FOR EACH RATING	
		17 WELLS	1 SURFACE WATER INTAKE
Pathogens	H	1	
	M	13	
	L	4	
Nutrients	H		
	M	12	1
	L	5	
Pesticides	H		
	M		
	L	17	1
VOCs	H	10	
	M	1	
	L	7	
Inorganics	H	3	
	M	9	1
	L	5	
Radionuclides	H	1	
	M	13	
	L	3	1
Radon	H		
	M	14	
	L	3	1
DBPs	H	14	1
	M	3	
	L		

Further information on the Source Water Assessment Program can be obtained by logging on to NJDEP's source water Web site at www.state.nj.us/dep/swap or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact Garth Moyle at (609) 345-3315, ext. 17.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

REGULATED SUBSTANCES ¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2006	15	0	2.76	1.65–2.76	No	Erosion of natural deposits
Barium (ppm)	2009	2	2	0.0439	ND–0.0439	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2009	[4]	[4]	0.93	0.19–0.93	No	Water additive used to control microbes
Combined Radium (pCi/L)	2006	5	0	1.65	0.516–1.65	No	Erosion of natural deposits
Fluoride (ppm)	2009	4	4	1.42	ND–1.42	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2009	60	NA	12.18	4.82–12.18	No	By-product of drinking water disinfection
Total Coliform Bacteria (% positive samples)	2009	5% of monthly samples are positive	0	2.19	NA	No	Naturally present in the environment
TTHMs [Total Trihalomethanes] (ppb)	2009	80	NA	45.48	12.29–45.48	No	By-product of drinking water chlorination
Turbidity ² (NTU)	2009	TT	NA	1.9	0.01–1.9	Yes	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	96.9	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2008	1.3	1.3	0.222	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2008	15	0	4	1/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

¹ Under a waiver granted on December 30, 1998, by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals, and synthetic organic chemicals. Our system received monitoring waivers for synthetic organic chemicals and asbestos.

² Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95 percent or more of the monthly samples must be less than or equal to 0.3 NTU (no sample may exceed 1 NTU).

Definitions

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

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 Level Goal): 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 contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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