



ANNE ARUNDEL COUNTY IS GOING GREEN!

Starting next year, customers may opt to receive their copy of the Water Quality Report electronically, via email. This will allow the County to reduce waste and conserve financial resources, while still providing its customers with important water quality information. A printed copy will still be available to customers upon request.

In an effort to make the transition to electronic delivery an easy one, please send the following information to

AACountyCCR@aacounty.org:

- **Your Name**
- **Mailing Address**
- **Water Billing Account #**
- **Preferred Email Address**

2012 Drinking Water Quality

Anne Arundel County Department of Public Works' Bureau of Utility Operations is proud to present the 2012 Drinking Water Quality Report. In this report you will find information about the sources, treatment, and delivery of your drinking water. Additionally, this report contains important information about the quality of your drinking water. Inside you will find the results of water quality analyses performed throughout the year.

In 2012 Anne Arundel County collected 10,352 water samples and approximately 42,925 water quality analyses were performed for 140 parameters. There were no water quality violations.

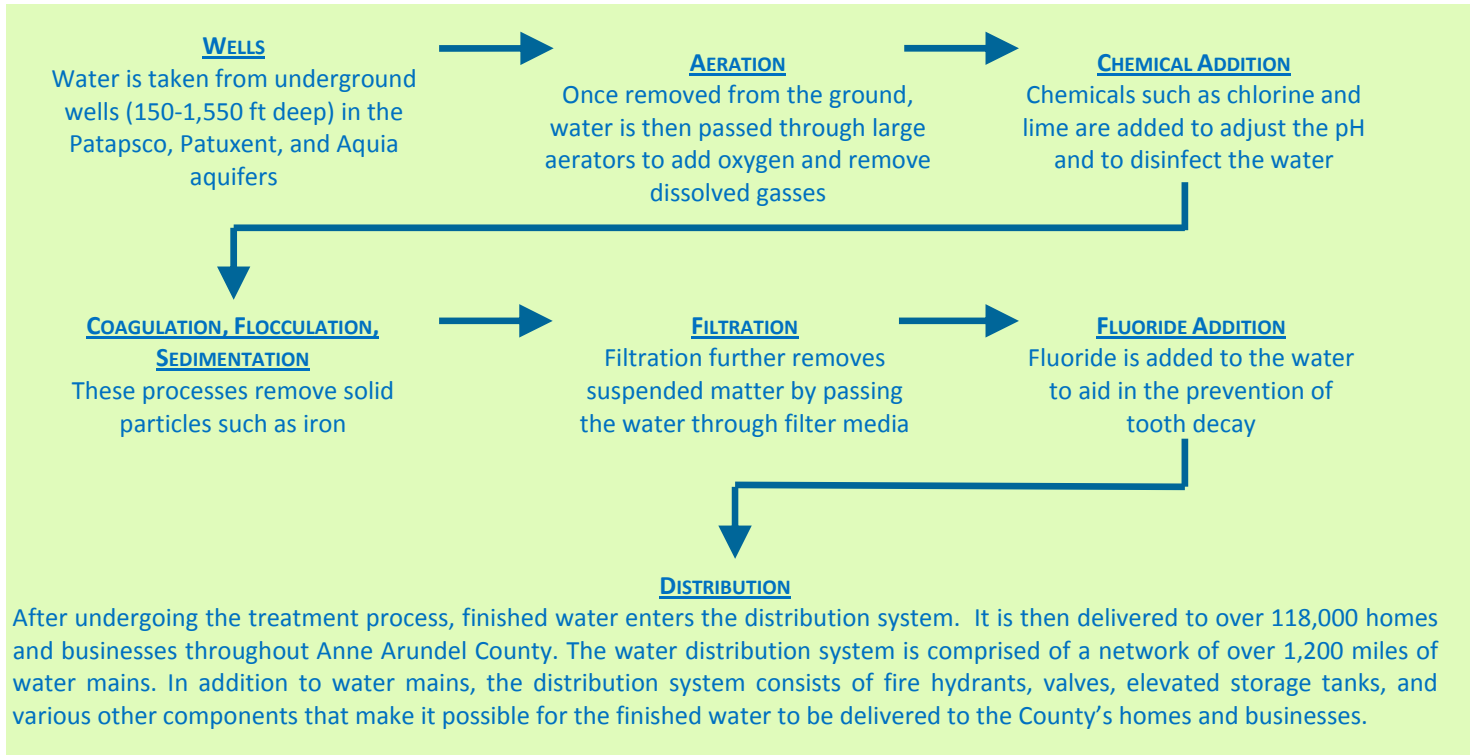
Anne Arundel County is committed to providing its citizens with drinking water that meets or exceeds all state and federal drinking water standards. As these standards and regulations evolve, we have strived to adopt new and better methods to deliver the best quality drinking water in the most cost-effective manner. We encourage you to take the time to read this report to learn more about the quality of your drinking water.

Anne Arundel County repaired over 700 water main breaks in 2012



The Water Treatment Process

The County's public water system is divided into 8 water service areas, as is illustrated in the map inside of this report. All of the service areas receive drinking water produced at County water treatment facilities. Two of the service areas also receive drinking water that is purchased by the County from Baltimore City. The City facilities use surface water from reservoirs as a supply source. The County facilities only use ground water from wells as a supply source. Like the majority of the water utilities in the United States, Anne Arundel County uses a multi-step treatment process to ensure that the water delivered to our citizens is of the highest quality. Below is a brief description of the various steps in the water treatment process:



2012 System Improvements

Each year, through the Capital Improvement Program, the County manages projects designed to improve the drinking water system by responding to and anticipating future growth, as well as preventing the deterioration of the County's existing system. More than 35 projects at an estimated cost of \$40 million are on-going at any time.



One of the projects completed in 2012 was an upgrade to the 62 year old Severndale Water Treatment Plant in Severna Park. The \$3 million project involved an upgrade of the chemical feed system, including a new sodium hypochlorite tank and metering pumps, to equip the plant with the best available technology. The upgrade has improved the overall efficiency of the plant, in addition to enhancing the exterior aesthetic qualities.

In addition to the Severndale Water Treatment Plant upgrade, other projects underway in 2012 included the cleaning and lining of existing distribution pipes, rehabilitation of water services, fire hydrants, and other components of the water distribution system.

Contact Us:

More information about the Department of Public Works can be found by visiting online: www.aacounty.org/dpw



Important Phone #'s:

24 Hour Emergency Hotline	410-222-8400
(from South County)	410-451-4118
Billing Office	410-222-1144
DPW Customer Relations	410-222-7582
DPW General Information	410-222-7500

EN ESPANOL: ESTE INFORME CONTIENE INFORMACION MUY IMPORTANTE. TRADUSCALO O HABLE CON UN AMIGO QUIEN LO ENTIENDA BIEN.

Information about your Water System

In addition to this annual report, information about your water system is provided in "Customer Updates" which are included in your utility bill, as well as comprehensive information on the Department of Public Works' internet site at www.aacounty.org/dpw. Additional informational materials may be obtained from the Public Works' Customer Relations staff by calling 410-222-7582.

Most printed informational materials are also available under the Customer Relations link on the web site. In addition, all capital projects, which include improvements and/or additions to the water supply system, are included in the annual budget presented by the County Executive to the County Council each spring. Public hearings are held within the County and public comment is welcome.

The County also maintains a "Ten Year Master Plan for Water Supply and Sewage Systems". The County Budget and Master Plan can be reviewed at any branch of the County library. For information on the Master Plan, contact the Long Range Planning Section, Office of Planning and Zoning at 410-222-7432

Definitions of Terms Used in the Water Quality Data Table

Maximum Contaminant Level (MCL): Highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): Level of contaminant in drinking water below which there is no known or expected risk to health, MCLG's allow for a margin of safety.

Action Level: Concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

N/A: Not applicable

ND: Not detectable at testing limit

NT: Not tested

ppm: Parts per million or milligrams per liter. One part per million is the equivalent of 1 cent in \$10,000 or one minute in two years.

ppb: Parts per billion or micrograms per liter. One part per billion is the equivalent of 1 cent in \$10,000,000 or one minute in two thousand years.

pCi/l: Parts per trillion or picocuries per liter (a measure of radiation)

NTU: Nephelometric turbidity units (a measure of water clarity)

TT: Treatment technique, a required process intended to reduce the level of a contaminant in drinking water.



DRINKING WATER QUALITY DATA --- 2012

PARAMETER	UNITS	MAXIMUM CONTAMINANT LEVELS		GLEN BURNIE / BALTIMORE CITY #1 ZONE		PASADENA / BALTIMORE CITY #2 ZONE		BROADNECK ZONE		CROFTON / ODENTON ZONE		BROAD CREEK ZONE		GIBSON ISLAND ZONE		HERALD HARBOR ZONE		ROSE HAVEN ZONE		NOTES	TYPICAL SOURCES OF CONTAMINATION
		MCL	MCLG	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection	highest level	range of detection		
Microbiological Contaminants																					
Total Coliforms	#	< 5% positive	0% positive	N/A	0%	N/A	0.00%	N/A	0%	N/A	0%	N/A	0%	N/A	0%	N/A	0%	N/A	0%	1	Naturally present in the environment.
Turbidity	NTU	TT	N/A	0.2	100%	0.2	100%	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	NT	N/A	2	Soil run-off.
Radioactive Contaminants																					
Alpha Emitters	pCi/l	15	0	3	1 - 3	4	1 - 4	1	1 - 1	NT	N/A	1	1 - 1	NT	N/A	1	1 - 1	NT	N/A	3, 6	Erosion and/or decay of natural deposits.
Combined Radium	pCi/l	5	0	3	1 - 3	5	2 - 5	1	1 - 1	NT	N/A	1	1 - 1	NT	N/A	1	1 - 1	NT	N/A	3, 6	Erosion and/or decay of natural deposits.
Inorganic Contaminants																					
Barium	ppb	2000	2000	20	20 - 40	20	20 - 40	36	7 - 36	16	16 - 16	8	8 - 8	11	11 - 11	ND	N/A	74	74 - 74	6	Erosion and/or decay of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Cadmium	ppb	5	5	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	6	Erosion and/or decay of natural deposits; corrosion of household plumbing systems, discharge from metal refineries.
Fluoride	ppm	4	4	1.5	ND - 1.5	1.6	ND - 1.6	1.8	ND - 1.8	1.2	ND - 1.2	1.2	0.4 - 1.2	1.6	0.5 - 1.6	1.4	0.5 - 1.4	1.6	0.6 - 1.6		Erosion and/or decay of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate	ppm	10	10	2.4	0.9 - 2.4	3.0	2.7 - 3.0	ND	N/A	ND	N/A	N/D	N/A	ND	N/A	ND	N/A	ND	N/A		Erosion and/or decay of natural deposits; leaching from septic tanks; sewage.
Nickel	ppb	100	N/A	6	6 - 6	18	11 - 18	ND	N/A	ND	N/A	ND	N/A	NT	N/A	ND	N/A	ND	N/A	6	Erosion and/or decay of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Lead	ppb	AL = 15	0	3	0	5	0	ND	0	ND	0	ND	0	ND	0	ND	0	8	0	5, 6	Erosion and/or decay of natural deposits; corrosion of household plumbing systems.
Copper	ppb	AL = 1300	1300	150	0	200	0	300	0	85	0	35	0	388	0	71	0	250	0	5, 6	Erosion and/or decay of natural deposits; corrosion of household plumbing systems.
Disinfection By-Products																					
Total Trihalomethanes	ppb	80	N/A	34.3	ND - 63.7	9.7	ND - 51.1	ND	N/A	1.7	1.7 - 1.7	2.7	ND - 5.3	4.1	1.1 - 7.5	1.7	ND - 7.5	10.7	6.7 - 14.1	4, 6	By-product of drinking water treatment processes.
Total Haloacetic Acids	ppb	60	N/A	19.9	ND - 41.3	7.0	ND - 53.5	ND	N/A	ND	N/A	1.3	ND - 2.6	1.5	ND - 5.1	0.9	ND - 5.1	7.3	5.7 - 8.6	4, 6	By-product of drinking water treatment processes.
Volatile Organic Contaminants / Synthetic Organic Contaminants																					
Tetrachloroethene	ppb	5	0	ND	N/A	1.9	1.9 - 1.9	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	NT	N/A	6	Leaching from pvc pipes; discharge from factories and dry cleaners.
Unregulated Contaminants																					
Methyl-tert-butyl-ether	ppb	N/A	N/A	ND	N/A	0.5	0.4 - 0.5	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A	ND	N/A		Octane enhancer of fuel products.
Sodium	ppm	N/A	N/A	4.4	4.4 - 4.4	12.3	5.5 - 12.3	3.8	2.3 - 3.8	4.4	4.4 - 4.4	4.4	4.4 - 4.4	4.5	4.5 - 4.5	3.2	3.2 - 3.2	9.0	8.0 - 9.0	6, 7	Naturally present in the environment; by-product of drinking water treatment processes.

Notes for the Data Table:

Note 1: The MCL and the MCLG for Total Coliforms is based on the percentage of positive coliform results in a given month. The MCL requires that less than or equal to 5% of the samples test positive. The percentage of positive sample results is shown in the range of detection column.

Note 2: Turbidity standards are based on a treatment technique and are only applicable to systems using surface water as a source. The maximum Turbidity allowed in a given month is 1 NTU, and 95% of the results must be less than 0.3 NTU. This % is indicated in the range of detection column.

Note 3: Compliance with the MCL for these contaminants is based on the average of four quarterly samples.

Note 4: The range of detection numbers represents individual analysis results, not an average. There were no MCL violations at any facility.

Note 5: Compliance with the MCL for Lead and Copper is based on the 90th percentile value of all analysis results. The number of sample results exceeding the MCL for these parameters is indicated in the range of detection column.

Note 6: Testing for some parameters is not required on an annual basis. Some results reflect the most recent testing between 2009 and 2011.

Note 7: Testing required by EPA to determine if an MCL/health standard should be set.

General Notes: *The drinking water was analyzed for more than 110 other parameters. These contaminants do not appear in the data table because they were not detected.

Important Information from the EPA

Radium is a naturally occurring substance which, if exposed to acidic conditions (low pH), can leach into groundwater. The EPA has set maximum contaminant levels for radium that are based on lifetime exposure. The County and State monitor the public water system. Some people, who drink water containing combined radium in excess of the MCL over many years, may have an increased risk of getting cancer. However, the risk is very small.

Radon is a naturally occurring radioactive gas that may cause cancer, and may be found in drinking water and indoor air. The EPA advises that some people who are exposed to radon in drinking water may have an increased risk of cancer over the course of their lifetime, especially lung cancer. Radon in soil under homes is the biggest source of radon in indoor air, and a greater risk of lung cancer than radon in drinking water. For more information, call EPA's Radon Hotline (800-SOS-RADON) or visit www.epa.gov/radon. Testing has indicated that radon is not present in the public water system at concentrations which would cause any health concerns.

Cryptosporidium is a microscopic parasite that may cause diarrhea, fever and gastroenteric disorders. Cryptosporidium may be found in drinking water that comes from surface water, not from underground aquifers. Baltimore City uses reservoirs and monitors its raw water sources for cryptosporidium. Samples were analyzed and determined to be free of viable organisms. The City protects its' reservoirs to prevent these organisms from entering the water supply.

Arsenic is a naturally occurring substance, which, if contained in drinking water, could increase the risk of serious health concerns such as circulatory problems. The current EPA level for this contaminant is 0.01 mg/l. Testing has indicated that there is no arsenic in the public water system.

Lead, when in elevated levels, can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials associated with service lines and home plumbing. The County is responsible for providing high quality drinking water, but cannot control the materials used in plumbing components. Testing shows that lead is not present in the public drinking water system at concentrations that would cause health concerns. Information on lead in drinking water, testing methods, and steps to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://epa.gov/safewater/lead>.

Source Water Assessment is a process for evaluating the vulnerability to contamination of the source of a public drinking water supply. The assessment does not address the treatment or distribution aspects of the water system, which are covered under separate provisions of the Safe Drinking Water Act. The Maryland Department of the Environment is the lead agency in developing these Assessments, which have been completed for all of the County's water systems.

Drinking water, including bottled water, may reasonably be expected to contain 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 effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800- 426-4791 or by visiting www.epa.gov/safewater.

Some people are more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer, undergoing chemotherapy, those having 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 microbial contaminants are available from the Safe Drinking Water Hotline.

The sources of drinking water (both tap 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 materials, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from waste treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic discharges, oil and gas production, mining or farming.

Pesticides & herbicides, come from a variety of sources such as agriculture, stormwater runoff and residential uses.

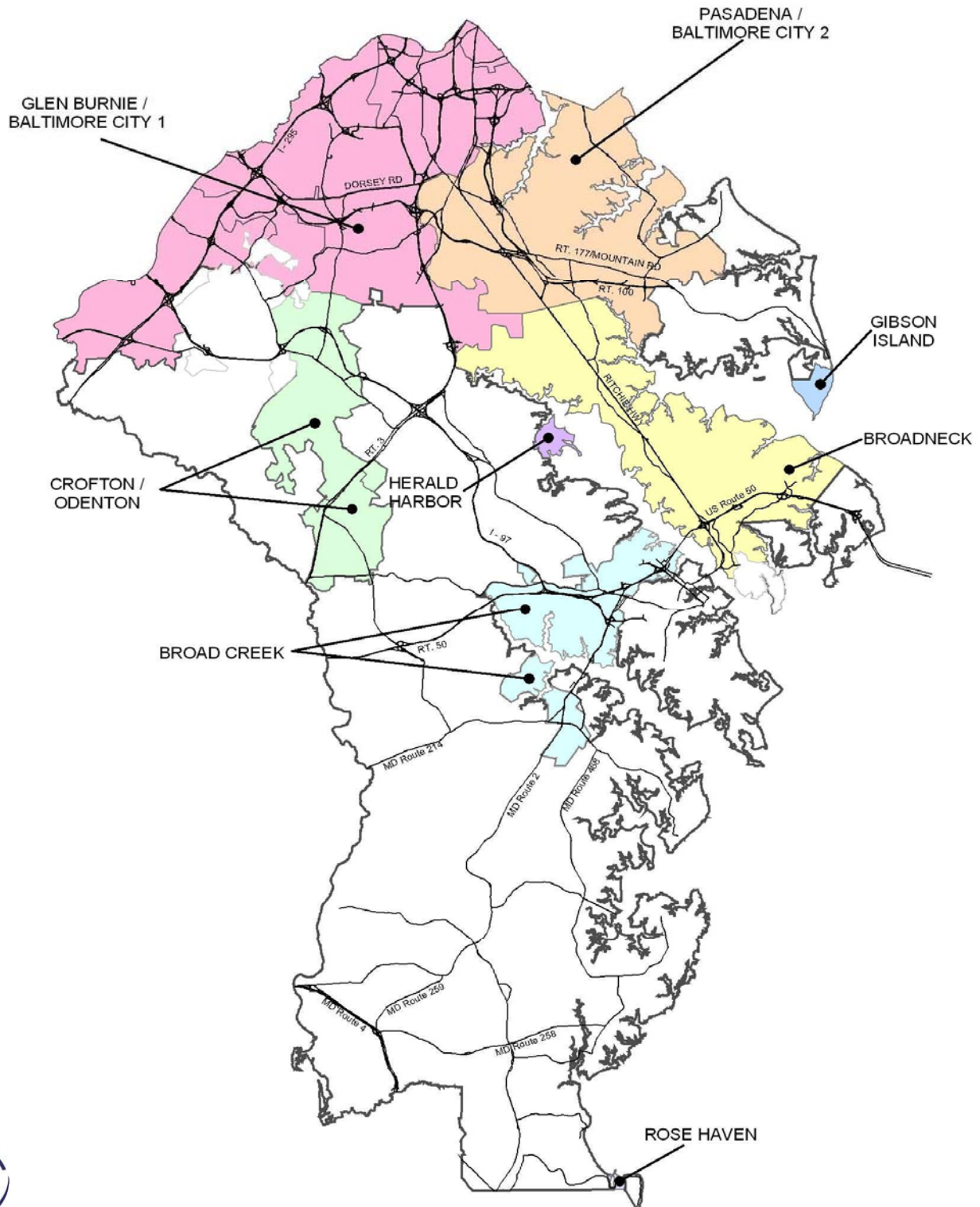
Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

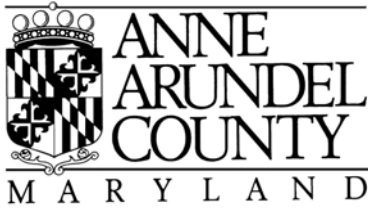
Anne Arundel County Water Service Areas

Glen Burnie/Baltimore City #1
Pasadena/Baltimore City #2
Broadneck
Crofton/Odenton

Broad Creek
Gibson Island
Herald Harbor
Rose Haven



A Commitment to Excellence!



Postal
Permit

County Executive Laura Neuman

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2012 Drinking Water Quality Report

A Message from the County Executive
June 2013

Dear Residents,

I am pleased to announce that the drinking water produced and delivered to your home by more than 350 utility professionals is clean and safe for consumption. This 2012 Drinking Water Quality Report provides important information on the thousands of water quality tests administered over the previous year. As you will note, the water we provide from aquifers deep under our County exceeds all Federal standards for drinking water quality and safety.



My colleagues at the Department of Public Works and I are committed to continuing to provide high quality water service by managing and maintaining our water infrastructure. The County has a long standing record of meeting these service standards and will continue to do so.

Sincerely,

A handwritten signature in blue ink, appearing to be "L. Neuman".

County Executive Laura Neuman

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