



CITY OF **NEWARK**
Mayor Ras J. Baraka

City of Newark Department of Water and Sewer Utilities

2018 Water Quality Report

PWS ID 0714001

Dear Fellow Newark Resident,



I am pleased to present the Water Quality Report, which confirms that the City of Newark's water is some of the best water in the State of New Jersey.

The City has acted quickly to protect residents in the Pequannock water system who may have high lead readings in pre-1986 one-and-two-family homes with privately owned lead lines on their property. We have distributed over 38,000 water filters, upgraded Pequannock water treatment and launched an 8-year program to help residents replace lead service lines.

If you suspect that your home has a lead service line, contact the Department of Water & Sewer Utilities by phone at (973) 733-4311 or by email at waterandsewer@ci.newark.nj.us. They will inspect and assess your water at no cost to you.

The customers are encouraged to visit www.newarklead serviceline.com to get all pertinent information regarding lead sources, health impacts, the steps to be taken to reduce the impact of lead, the efforts put forward by the City of Newark in combating with lead exceedance and public participation.

We appreciate your understanding. Please know that we are always here to assist and serve your needs.

Ras J. Baraka, Mayor

This report contains important information about our drinking water. If you do not understand, please have someone explain it for you.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

Este relatório contém informações importantes sobre a sua água potável. Traduza-o ou fale com alguém que o compreenda.

OUR PLEDGE

Newark is committed to providing a reliable supply of safe, quality drinking water to more than 500,000 people in 10 communities. We also pledge to meet and exceed safe drinking water quality standards as members of the Partnership for Safe Water Program. The Partnership is a voluntary cooperative effort between the EPA, drinking water professional organizations, and more



than 200 drinking water utilities across the country. All water utilities that join the Partnership agree to adopt stringent performance standards to protect the water supply against microbiological contamination. Each year we provide this report on the quality of the water delivered by the City of Newark. This report meets the Federal Safe Drinking Water Act (SDWA) requirement for “Consumer Confidence Reports” and contains information on the source of our water, its constituents, and the health risks associated with any contaminants.

The City of Newark has a water treatment plant where it treats and filters our water to ensure its safety and potability. Newark routinely monitors and tests the water at rivers, lakes and streams that supply its reservoirs. Newark continually monitors the quality of water throughout the distribution system, which finds its way to you, the consumer.

SOURCE WATER

Newark withdraws water from the Pequannock Watershed in West Milford, New Jersey and treats it at the Pequannock Water Treatment Plant. Water quality monitoring stations are operated by the U.S. Geological Survey upstream of the Pequannock WTP intake at the Charlotteburg Reservoir and Oak Ridge Reservoir.. These monitoring stations provide continuous data for important water quality parameters, and help provide advanced warning of adverse changes in water quality.

Newark can also receive water from North Jersey District Water Supply Commission (NJDWSC). NJDWSC treats surface water from the Wanaque Reservoir at the Wanaque Water Treatment Plant.

Interconnections with other towns or cities exist throughout the system. These include Townships of Belleville, Bloomfield, Elizabeth, Nutley and Pequannock.

Micro-biological	City of Newark 2065 samples	NJDWSC	Federal/State MCL	MCL Meets Standard?	MCLG	
Total Coliform	17 (August) out of 250 samples	0	Testing Positive < 5% per month	No (only in August 6.8% positive)	0	
Volatile Organic Compounds	City of Newark	Federal/State MCL	MCL Meets Standard?	Typical Source of Contaminant		
VOC's (ppb)	ND	Dependent on specific VOC	Yes	Industrial factory discharge. They include benzene, toluene and naphthalene.		
Regulated Disinfectants	City of Newark		NJDWSC	MRDL	MRDLG	Source of Contamination
	Min	Max				
Distribution System Chlorine, ppm	0.52	2.15	0.69	4.0	4.0	Water Additive used to control microbes
Source (Raw) Water Pathogen Monitoring	City of Newark		NJDWSC	Source of Contamination		
	Min	Max				
Giardia Cyst	0	0	N/A	Microbial Pathogens found in all untreated water. Chlorination will inactivate Giardia		
Giardia, Cyst/L	0	0	0 - 0.4	Surface Water Causes Giardiasis		
Cryptosporidium, Oocysts/L	N/A		0 - 0.1	Microbial Pathogens found in surface water.		
Synthetic Organic Compounds (SOC)				Asbestos		
Waiver granted till 12/31/2019				To be sampled before 12/31/2019		
Haloacetic Acids(ppb)			Min	Max	LRAA	
Site 1			26.3	109	62.0	
Site 2			34.0	109	76.0	
Site 3			33.0	123	80.0	
Site 4			28.8	117	55.0	
Site 5			36.0	122	78.0	
Site 6			0.00	2.85	2.00	
Site 7			31.8	95.0	68.0	
Site 8			22.0	67.6	53.0	
Site 9			24.6	119	81.0	
Site 10			26.5	109	74.0	
Site 11			30.6	130	82.0	
Site 12			22.9	116	79.0	
NJDWSC Annual (August 2018) OTP – 31.7, Admin Building – 22.6						
By Product of Drinking Water Chlorination						
Stage 2 Trihalomethanes (ppb)			Min	Max	LRAA	
Site 1			39.8	102	75.0	
Site 2			30.5	120	75.0	
Site 3			31.7	105	74.0	
Site 4			36.9	114	72.0	
Site 5			36.1	110	79.0	
Site 6			66.2	76.6	72.0	
Site 7			32.0	113	76.0	
Site 8			47.0	109	73.0	
Site 9			26.3	112	75.0	
Site 10			32.0	111	76.0	
Site 11			27.2	104	43.0	
Site 12			20.0	53.0	42.0	
NJDWSC Annual (August 2018) OTP – 46.1, Admin Building – 38.9						

ITEMS OF SPECIAL INTEREST TO NEWARKERS

Lakes, rivers, and reservoirs may contain *Cryptosporidium*, which is a microscopic parasite that can cause respiratory and gastrointestinal illness in people. It is found in human feces and many domestic and wild animals. We test for *Cryptosporidium* on a monthly basis in our Pequannock finished water surface water supplies. It has never been detected in a viable state in any of our treated water supplies nor has it been found in the Wanaque Supply.

NITRATE

Levels above 10 ppm in drinking water is a health risk for infants less than six months old and can cause blue baby syndrome. Levels may rise quickly for short periods because of rainfall or agricultural activity. *If you are caring for an infant, you should ask for advice from your healthcare provider.

ARSENIC

To ensure that tap water is safe to drink; EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.

TURBIDITY

A measure of cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.



LEAD

In the first half of 2017, and the second half of 2018, the City of Newark experienced a lead exceedance in its drinking water. Elevated lead levels were particularly found in samples taken from homes with lead service lines.

The City of Newark is now, as it has always been, committed to providing clean, safe, and reliable drinking water to all residents. In order to uphold this commitment, the City will continue to implement both immediate and long-term measures to minimize lead levels throughout our water system. These efforts include:

- Distribution of free filters and replacement cartridges to qualified Newark residents. Water filter eligibility is limited to those whose water tests above 15ppb or who live in single-family and multi-family homes that are supplied by the Pequannock Water System, and also have lead service lines or lead interior plumbing. To learn more about the filter distribution program, please visit www.newarkleadservice.com
- Implementation of the Lead Service Line Replacement Program, which will assist property owners with the replacement of their lead service lines at a reduced cost. To register or learn more about the Lead Service Line Replacement Program, please visit www.newarkleadservice.com
- Installation of a new corrosion inhibitor in the Pequannock Water Treatment Process. The new corrosion control treatment is Zinc Orthophosphate and it is introduced into the water at the Valley Road Re-Chlorination Station. Zinc Orthophosphate will work by coating the lead pipes and fixtures to prevent lead from corroding and leaching into our drinking water. The temporary chemical feed system became operational in May of 2019 and we expect to see reductions in lead levels by the end of the fourth quarter of 2019.
- Continuing to regularly sample and test our drinking water to monitor lead levels in accordance with all federal and state safety standards.

LEAD - CONTINUED

If you are concerned about lead in your water, you may wish to have your water tested. If you suspect that your home has a lead service line, contact the Department of Water & Sewer Utilities by phone at (973) 733-4311 or by email at waterandsewer@ci.newark.nj.us. We will inspect and assess your water at no cost to you.

Infants and children who drink water-containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, (800) 426-4791, or at <http://www.epa.gov/safewater/lead>.

Also please visit www.newarkleadservice.com to get all pertinent information regarding lead sources, health impacts, the steps to be taken to reduce the impact of lead, the efforts put forward by the City of Newark in combating with lead exceedance.

Some individuals may be more vulnerable to contaminants in drinking water than the general population. The at risk populations include the following: 1.) Immuno-compromised persons such as individuals who suffer from cancer and are undergoing chemotherapy; 2.) Persons who have undergone organ transplants; 3.) People with HIV/AIDS or other immune system disorders; and 4.) Elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. PA/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.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During the 2018 compliance period, we did monitor and test for cyanide during the reporting period but our testing laboratory reported the results late and this therefore constituted a reporting violation. We can, however, assure the quality of your drinking water for Cyanide during that time met regulatory requirements.

Regarding SOC (synthetic Organic Carbon), NJDEP issued SOC waivers to many systems for the current 3-year compliance period (2017-2019). Our water system received a SOC waiver from the NJDEP.

WATER QUALITY TABLES



The tables on the following pages list all the drinking water analytes that were detected during calendar year 2018. The presence of these analytes in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables is from January 1 through December 31, 2018. The state requires us to monitor the water for certain contaminants less than once per year because the concentrations of these

contaminants are not expected to vary significantly from year to year.

Radiological Contaminants	City of Newark	NJDWSC	Federal/State MCL	MCL Meets Standard?	MCLG	Typical Source of Contaminant
Combined Radium (pCi/L)	1.5	N/A	5	Yes	0	Erosion of natural deposits.
Lead and Copper	City of Newark (90th percentile)		Federal/State MCL	MCL Meets Standard?	MCLG	Typical Source of Contaminant
	Jan-Jun 129 Samples	Jul-Dec 246 Samples				
Lead (ppb) 2018	17.8 16 sites above action level	47.9 109 sites above action level	AL=15	No	0	Corrosion of household plumbing; Erosion of natural deposits; and, Leaching from wood preservatives.
	NJDWSC (90th percentile)			Yes		
	Jan-Jun 10 Samples	Jul-Dec 10 Samples				
	<2.0					
Copper (ppm) 2018	City of Newark (90th percentile)		AL=1.3	Yes	1.3	Corrosion of household plumbing; Erosion of natural deposits; and, Leaching from wood preservatives.
	Jan-Jun 103 Samples	Jul-Dec 102 Samples				
	0.18	0.218				
	NJDWSC (90th percentile)					
	Jan-Jun 10 Samples	Jan-Jun 10 Samples				
0.094						
Turbidity	City of Newark		Federal/State MCL	MCL Meets Standard?	MCLG	Typical Source of Contaminant
	Min 0.05	Max 0.65				
Turbidity (NTU and Combined Filtered Water)	0.65 – highest single measurement		TT= 1 NTU	No The City of Newark had experienced a treatment technique violation for the month of November/December for turbidity. Subsequently water treatment processes have been upgraded and turbidity meets the state and federal guidelines.	N/A	Soil run-off
	72.35% lowest monthly-percent of samples <0.3 NTU		95%- percentage of samples <0.3 NTU			
	0.22 – Average					
	NJDWSC (90th percentile)		Federal/State MCL			
	1 – highest single measurement 0.41		TT= 1 NTU			
	99.9% - lowest monthly percent of samples <0.3 NTU		95%- percentage of samples <0.3 NTU			
0.06 - Average			Yes			
Total Organic Carbon	City of Newark	NJDWSC	Federal/State MCL	MCL Meets Standard?	MCLG	Typical Source of Contaminant
TOC (ppm)	N/A	Running Average = 1.1 Removal Ratio = 1.0-1.3	TT= Meeting alternative criteria removal ratio of 1.0	Yes	N/A	Naturally present in environment

KEY TERMS & ACRONYMS

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

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

CU: Color Units.

EPA: United States Environmental Protection Agency

Inorganic Contaminants: Contaminants such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming. These contaminants may be present in source water.

LRAA: Locational running annual average

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

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

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.

mfl: Million fibers per liter.

mrem/year: Millirems per year, a measure of radiation absorbed by the body.

ND: Not detectable at testing limit.

NS: No standard.

ntu: Nephelometric Turbidity Units.

picoCurie (pCi): A unit used to describe the level of activity or decay of a radioactive element.

pCi/l: PicoCuries per liter (a measure of radioactivity).

ppb (parts per billion): 1 drop in 10,000 gallons, 1 inch in 16,000 miles, or one penny in \$10,000,000.

ppm (parts per million): 1 drop in 10 gallons, 1 inch in 16 miles, or one penny in \$10,000.

ppq: Parts per quadrillion, or picograms per liter.

ppt: Parts per trillion, or nanograms per liter.

RUL: Recommended Upper Limit.

Secondary Contaminants: Federal drinking water measurements for substances that are not health related. These are recommended levels and reflect aesthetic qualities of water.

SMCL: Secondary Maximum Contaminant Level.

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

TON: Threshold Odor Number.

ADDITIONAL RESOURCES

Newark Water & Sewer website: https://waterandsewer.newarknj.gov/	Newark Water & Sewer: 973-256-4965
EPA Drinking Water website: www.epa.gov/safewater	EPA Safe Drinking Water Hotline: 800-426-4791
NJDEP Water Supply website: www.nj.gov/dep/watersupply	NJDEP Bureau of Safe Drinking Water: 609-292-5550
American Water Works Association (AWWA) website: www.awwa.org	AWWA New Jersey website: www.njawwa.org

SOURCE WATER ASSESSMENT

NJDEP has prepared Source Water Assessment reports and summaries for all public water systems. The Source Water Assessment for the Newark system (PWS ID 0714001) and NJDWSC system (PWS ID 1613001) can be obtained by accessing NJDEP's source water assessment web site at <http://www.nj.gov/dep/watersupply/swap/index.html>, or by contacting the NJDEP, Bureau of Safe Drinking Water at 609-292-5550 or watersupply@dep.nj.gov. If a system is rated highly susceptible for a contamination category, it does not mean a customer is – or will be – consuming contaminated water. The rating reflects the potential for contamination of a source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any of those contaminants are detected at frequencies and concentrations above allowable levels. The source water assessments performed on the intakes for each system lists the susceptibility ratings for a variety of contaminants that may be present in source waters as seen in the tables below.

Surface Water Intakes	Pathogens	Nutrients	Pesticides	Volatile Organic Compounds
Newark	High	Low	Low	Low
NJDWSC (5)	High (5)	High (5)	Medium (2) Low (3)	Medium (5)

Surface Water Intakes	Inorganic Contaminants	Radionuclides	Radon	Disinfection Byproduct Precursors
Newark	High	Low	Low	High
NJDWSC (5)	High (5)	Low (5)	Low (5)	High (5)

WHAT TO EXPECT FROM YOUR WATER



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 material, and can pick up substances resulting from the presence of animals or from human activity. To ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of

certain substances in water provided by public water systems. The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for Asbestos, Volatile Organic Chemicals and Synthetic Organic Chemicals.

SUBSTANCES THAT COULD BE IN WATER

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 effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791). Substances that may be present in source water include:

- Microbial Contaminants – such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;
- Inorganic Contaminants – such as salts and metals, 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 – 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, are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;
- Radioactive Contaminants - can be naturally occurring or may be the result of oil and gas production and mining activities.

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 regulates and establish limits for contaminants in bottled water.

CHLORINE TREATS OUR WATER

For almost 100 years, water suppliers in America and other countries have used chlorine to treat or disinfect drinking water. According to the EPA and other health agencies, chlorine is currently one of the most effective disinfectants used to kill harmful microorganisms. Disinfection of all public water supplies is required by federal and state laws and regulations, including the Safe Drinking Water Act and the Surface Water Treatment Rule. Water supplied by the City of Newark meets the Chlorine Contact Time (CT) requirements for inactivation of Giardia. Water is chlorinated before and after treatment and further chlorinated at Montclair chlorination station before entering the water.

TESTING AND TREATMENT

Newark takes multiple steps in our testing and treatment processes to make sure the water we deliver to your home is safe to drink and meets the contaminant level standards. Your water goes through a thorough treatment process which includes removing small debris, filtering, and disinfecting. In addition, Newark regularly collects and tests approximately 300 water samples a day to ensure that the water our customers receive meets and exceeds federal and state drinking water quality standards. Our commitment to providing you, our customers, with quality drinking water is proven through the comprehensive testing and treatment processes we employ.



Secondary Compounds	City of Newark	NJDWSC		Unit Measure	Federal/State Secondary Standards (optimal Range)	Source of Contamination
Alkylbenzene Sulfonate and Linear Alkylbenzene	N/A	<0.05		ppm	500	Naturally present in environment
Alkalinity	25.3	38		ppm	NS	A characteristic of water caused by carbonate and bicarbonates
Aluminum	0.083	0.060		ppm	<0.200	By-product of water treatment using aluminum salts
Chloride	39.0	71		ppm	<250	Erosion of natural deposits
Color	2	2		CU	<10	Presence of manganese and iron, plankton, humus, peat and weeds
Copper	0.0514	0.019		ppm	<1	Naturally present in environment
Hardness	51.4	52		ppm	50-250	Caused primarily by salts of calcium and magnesium
Iron	0.017	0.012		ppm	0.3	Erosion of natural deposits
Manganese	0.017	<0.0023		ppm	0.05	
Odor	1.0	<1		TON	3	Algae and plant matter
pH	7.02	8.1		units	6.5-8.5	Presence of carbonate, bicarbonates and carbon dioxide
Sodium	23.2	40		ppm	<50	Runoff from road salt and from some water softening process
Sulfate	10.3	7.6		ppm	250	Erosion of natural deposits
Total Dissolved Solids	108	177		ppm	500	
Zinc	<0.2	0.016		ppm	5	Erosion of natural deposits, pipe corrosion and/or runoff
Inorganic Contaminants	City of Newark	NJDWSC	Federal/State MCL	MCL Meets Standard?	MCLG	Typical Source of Contaminant
Arsenic (ppb)	<0.5	N/A	10.0/5.0	Yes	0	Erosion of natural deposits; Runoff from orchards; Run off from glass and electronics; and, production wastes.
Barium (ppm)	0.008	0.0145	2.0/2.0	Yes	2	Erosion of natural deposits.
Fluoride (ppm)	<0.1	N/A	4	Yes	4	
Mercury (ppm)	<0.0002	N/A	0.002/0.002	Yes	0.002	Erosion of natural deposits; and, discharge from refineries and factories.
Nitrate (ppm as Nitrogen)	< 0.1	0.351	10.0/10.0	Yes	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; and, Erosion of natural deposits.