

# Annual Drinking Water Quality Report

## The Borough of Keyport Water Department

For the Year 2017, Results from the Year 2016

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. We have two wells that draw groundwater from the Middle Potomac-Raritan-Magothy Aquifer and the Upper Potomac-Raritan-Magothy Aquifer System. We also purchased water from Shorelands Water Company and from New Jersey American Water from January 2016 to May of 2016 and October to December 2016.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued a Source Water Assessment Report and Summary for this public water system, which is available at [WWW.state.nj.us/dep/swap](http://WWW.state.nj.us/dep/swap) or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system to obtain information regarding the Borough of Keyport Water Department, New Jersey American Water and Shorelands Water Company's Source Water Assessments, which are included in this report.

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 (800-426-4791).

Borough of Keyport Water Department Test Results PWS ID #NJ1322001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
<b>Inorganic Contaminants:</b>						
Arsenic Test results Yr. 2015	N	1.3	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2015	N	0.03	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium Test results Yr. 2015	N	1.2	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Nickel Test results Yr. 2015	N	1.9	ppb	N/A	N/A	Erosion of natural deposits
Copper Test results Yr. 2015 Result at 90 <sup>th</sup> Percentile	N	0.1 No samples exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2015 Result at 90 <sup>th</sup> Percentile	N	ND No samples exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
<b>Disinfection Byproducts:</b>						
TTHM Total Trihalomethanes Test results Yr. 2016	N	Range = 6 – 69 Highest LRAA = 41	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids Test results Yr. 2016	N	Range = ND – 30 Highest LRAA = 21	ppb	N/A	60	By-product of drinking water disinfection
<b>Regulated Disinfectants</b>		<b>Level Detected</b>		<b>MRDL</b>		<b>MRDLG</b>
Chlorine Test results Yr. 2016		Average = 0.5 ppm		4.0 ppm		4.0 ppm

HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

The Borough of Keyport Water Department, Shorelands Water Company and New Jersey American Water routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables show the results of that monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2016. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

**If you have any questions about this report or concerning your drinking water, please call 732-739-3900. We want you to be informed about you drinking water. If you want to learn more, please attend any of our regularly scheduled Borough Council Meetings at Borough Hall, 70 West Front Street, on the first and third Tuesday of each month. All are welcome.**

**Lead:** 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. The Borough of Keyport Water Department, Shorelands Water Company and New Jersey American Water are 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 second to 2 minutes before using water for drinking and 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 or at <http://www.epa.gov/safewater/lead>.

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 and, in some cases, radioactive material, 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 sewage 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 water 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 storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants which can be naturally occurring or 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 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 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.

#### **DEFINITIONS**

In the tables, you might find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

Total Organic Carbon - Total Organ Carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection byproducts. The *Treatment Technique* for TOC requires that 35% - 45% of the TOC in the raw water is removed through the treatment processes.

Locational Running Annual Average (LRAA) - LRAA calculation is based on four completed quarters of results for disinfection byproducts at each individual monitoring location.

Turbidity - Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium microbial growth. Turbidity is measured as an indication of the effectiveness of the filtration process. The *Treatment Technique* for turbidity requires that no individual sample exceeds 1 NTU and 95% of the samples collected during the month must be less than 0.3 NTU.

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.

Maximum Residual Disinfectant Level (MRDL): 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.

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.

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. The Borough of Keyport Water Department received monitoring waivers for asbestos and synthetic organic chemicals. The Shorelands Water Company and New Jersey American Water received monitoring waivers for synthetic organic chemicals.

Shorelands Water Company 2016 Test Results PWSID # NJ1339001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
<b>Inorganic Contaminants:</b>						
Copper Result at 90 <sup>th</sup> Percentile	N	0.07 No samples exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	Range = ND – 0.96 Highest detect = 0.96	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Result at 90 <sup>th</sup> Percentile	N	ND No samples exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	N	Range = ND – 0.66	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Disinfection Byproducts:</b>						
TTHM Total Trihalomethanes	N	Range = 1 - 76 Highest LRAA = 51	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = 2 - 26 Highest LRAA = 24	ppb	N/A	60	By-product of drinking water disinfection
<b>Regulated Disinfectants</b>		<b>Level Detected</b>		<b>MRDL</b>		<b>MRDLG</b>
Chlorine / Chloramines		Average = 1.1		4.0 ppm		4.0 ppm

HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

The Shorelands Water Company participated in monitoring for unregulated contaminants with the Unregulated Contaminant Monitoring Rule (UCMR). Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. Our results are available upon request. For testing conducted in the Shorelands Water System we found the substances listed.

Contaminant	Level Detected	Units of Measurement	Likely source
Chlorate	Range = ND – 800	ppb	Agricultural defoliant of desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium (VI) Hexavalant	Range = 0.03 – 0.12	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Strontium	Range = 28 - 100	ppb	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Chromium	Range = ND – 0.4	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation

New Jersey American Water – Monmouth System 2016 Test Results						
PWSID # NJ1345001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants:</b>						
Turbidity	N	Range = 0.01 – 0.22 100% < 0.3 NTU	NTU	N/A	TT 95% of monthly samples < 0.3 NTU	Soil runoff
Total Organ Carbon (TOC)	N	Range = 1.20 – 2.26 Highest removal = 2.26	ppm	N/A	TT % of removal	Soil runoff
<b>Inorganic Contaminants:</b>						
Chromium (Total)	N	Range = ND – 1.4 Highest detect = 1.4	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper Result at 90 <sup>th</sup> Percentile Test results Yr. 2014	N	0.23 No samples exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	Range = 0.5 – 0.67 Highest detect = 0.67	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Result at 90 <sup>th</sup> Percentile Test results Yr. 2014	N	3 1 sample out of 50 exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate (as Nitrogen)	N	Range = 0.07 – 0.31 Highest detect = 0.31	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Disinfection Byproducts / Volatile Organic Contaminants:</b>						
Carbon Tetrachloride	N	Range = ND – 0.07 Highest detect = 0.07	ppb	0	5	Discharge from chemical plants and other industrial activities
TTHM Total Trihalomethanes	N	Range = 3 - 93 Highest LRAA = 58	ppb	N/A	80	By-product of drinking water disinfection
HAA5 Haloacetic Acids	N	Range = ND - 55 Highest LRAA = 20	ppb	N/A	60	By-product of drinking water disinfection
<b>Regulated Disinfectants</b>		<b>Level Detected</b>		<b>MRDL</b>		<b>MRDLG</b>
Chloramines		Range = 0.06 – 2.98		4.0 ppm		4.0 ppm
<b>Secondary Contaminant</b>		<b>Level Detected</b>		<b>Units of Measurement</b>		<b>RUL</b>
Sodium		Range = 29 - 58		ppm		50

HAA5 and TTHM compliance is based on a Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

New Jersey American Water – Monmouth System exceeded the secondary Recommended Upper Limit for Sodium. For healthy individuals, the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the Recommended Upper Limit (RUL) may be of concern to individuals on a sodium restricted diet.

New Jersey American Water – Monmouth System participated in monitoring for unregulated contaminants with the Unregulated Contaminant Monitoring Rule (UCMR). Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. Our results are available upon request. For testing conducted in the Monmouth System we found the substances listed.

Contaminant	Level Detected	Units of Measurement	Likely source
1,4-Dioxane	Range = ND – 0.50	ppb	Cyclic aliphatic ether; used as a solvent or solvent stabilizer in manufacturing and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos
Chlorate	Range = ND – 760	ppb	Agricultural defoliant of desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium (VI) Hexavalent	Range = ND – 0.53	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Strontium	Range = 38 - 509	ppb	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions

**Cryptosporidium**

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at a greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

**Susceptibility Ratings for Borough of Keyport Water Department, Shorelands Water Company and New Jersey American Water Sources**

The tables below illustrate the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The tables, provide the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system’s source water assessment report.

The seven contaminant categories are defined at the bottom of this page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes’ susceptibility to radionuclides was not determined and they all received a low rating.

**If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water.** The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

**Shorelands Water Company - PWSID # NJ1339001**

Shorelands Water Company is a public community water system consisting of 7 wells.

This system’s source water comes from the following aquifers: Middle Potomac-Raritan-Magothy Aquifer System, Old Bridge & Farrington Aquifer System

This system purchases water from the following water system: New Jersey American Water

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 7			7			7			7			7			7		4	3			7		4	3

**NJ American Water – Monmouth System - PWSID # NJ1345001**

NJ American Water Company – Monmouth System is a public community water system consisting of 30 wells, 5 surface water intakes, and 4 purchased ground water sources.

This system’s source water comes from the following aquifers and surface water bodies: Upper Potomac-Raritan-Magothy Aquifer System, Swimming River Reservoir, Shark River, Middle Potomac-Raritan-Magothy Aquifer System, Jumping Brook, Glendola Reservoir (NJWSA Manasquan System), Glendola Reservoir (Shark River)

This system can purchase water from the following water systems: Shorelands Water Company, Red Bank Water Department and Allenhurst water Department.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 30			30			30			30			30		18	12		19	11			30		18	12
Surface water intakes - 5	5			1	4			2	3		5		3	2				5			5	5		

**Borough of Keyport Water Department-PWSID # 1322001**

Keyport Water Department is a public community water system consisting of 2 wells and 2 purchased ground water sources.

This system’s source water comes from the following aquifers: Middle Potomac-Raritan Magothy Aquifer, Upper Potomac-Raritan-Magothy Aquifer System.

This system purchases water from the following water systems: Shorelands Water Company, New Jersey American Water

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors			
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
Wells - 2		2			1	1			2	2					2	2				2			1	1	

**Pathogens:** Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

**Nutrients:** Compounds, minerals and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

**Volatile Organic Compounds:** Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

**Pesticides:** Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

**Inorganics:** Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.

**Radionuclides:** Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

**Radon:** Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394.

**Disinfection Byproduct Precursors:** A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.