

Annual Drinking Water Quality Report

Essex Fells Water Utility – PWSID 0706001

For the Year 2023 - Results from the Year 2022

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. Our constant goal is to provide you with a safe and dependable supply of drinking water.

We are committed to ensuring the quality of your water. Our sixteen wells draw groundwater from the Watchung Basalt, Brunswick Shale, and Stratified Glacial Drift. The wells range in depth from 94 to 566 feet and provide most of our drinking water throughout the year. In 2022 we purchased water from New Jersey American Water. Water Quality test results for New Jersey American Water are included in this report. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for these public water systems, which are available 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 your public water system to obtain information regarding Essex Fells Water Utility Source Water Assessment. Essex Fells Water Utility's source water susceptibility ratings and a list of potential contaminant sources is 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If you are a landlord, you must distribute this Drinking Water Quality Report to every tenant as soon as practicable, but no later than three business days after receipt. Delivery must be done by hand, mail, or email, and by posting the information in a prominent location at the entrance of each rental premises, pursuant to section #3 of NJ P.L. 2021, c.82 (C.58:12A-12.4 et seq.).

The Essex Fells Water Utility routinely monitors for contaminants in your drinking water according to Federal and State laws. The tables in this report show the results of that monitoring for the period of January 1, 2022 to December 31, 2022. The state allows monitoring for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, are more than one year old.

Essex Fells Water Utility – 2022 Test Results						
PWS ID #NJ0706001						
Contaminant	Violation Y/N	Level Detected	Units	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Arsenic	N	1.6	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronic production wastes.
Barium	N	0.03	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	N	1.95	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper Result at 90 th Percentile Year 2021 results	N	0.184 No samples exceeded the action level.	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits.
Lead Result at 90 th Percentile Year 2021 results	N	ND No samples exceeded the action level.	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel	N	3.56	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen)	N	2.1	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Perfluorinated Compounds:						
PFNA Perfluorononanoic Acid	N	Range = ND Highest detect = 0	ppt	N/A	13	Discharge from industrial chemical factories
PFOA Perfluorooctane Acid	N	Range = 9 - 14 Highest detect = 14 Average = 11	ppt	N/A	14	Used in the manufacture of fluoropolymers
PFOS Perfluorooctane Sulfonic Acid	N	Range = ND – 4.5 Highest detect = 4.5 Average = 2.6	ppt	N/A	13	Used in the manufacture of fluoropolymers
Disinfection By-Products:						
HAA5 Haloacetic Acids	N	Range = ND - 5 Highest LRAA = 2	ppb	N/A	60	By-product of drinking water disinfection
TTHM Total Trihalomethanes	N	Range = 1 – 17 Highest LRAA = 7	ppb	N/A	80	By-product of drinking water disinfection
Radioactive Contaminants:						
Gross Alpha Test results Yr. 2015	N	Range = ND – 4.4 Highest detect = 4.4	pCi/l	0	15	Erosion of natural deposits
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine Water additive used to control microbes		Range = 0.4 – 0.98 ppm Average = 0.69 ppm		4.0 ppm		4.0 ppm

For total haloacetic acids (HAA5s) and total trihalomethanes (TTHMs), which are disinfection byproducts, 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.

Regarding PFOA, you were previously notified in the third quarter of 2021, and on an ongoing quarterly basis, of a violation of the maximum contaminant level (MCL) of 14 parts per trillion. We are pleased to advise you that the water currently being delivered to you is in compliance with the 14 parts per trillion MCL as a result of the construction a PFOA treatment facility for two (2) of our wells at TP001001 and by shutting down the other two treatment plants, TP002015 and TP003020. We have also adjusted operational protocols for our water sources that remain in service in order to reduce the overall level of PFOA. Even though the water meets MCL standards, DEP requires the issuance of quarterly notices until permanent treatment to remove PFOA is provided for all facilities. We anticipate that a permanent treatment facility for thirteen (13) of our wells at TP001001 will be completed in 2024. Design plans for permanent treatment facilities for three (3) additional wells, at TP00215 and TP003020, will be submitted to the DEP for approval shortly. Once the new treatment facilities at TP00215 and TP003020 are approved and constructed, those two treatment plants will be brought back online.

What are PFOA and PFOS? - Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are per and polyfluoroalkyl substances (PFAS), previously referred to as perfluorinated compounds, or PFCs, that are man-made and used in industrial and commercial applications. PFOA was used as a processing aid in the manufacture of fluoropolymers used in non-stick cookware and other products, as well as other commercial and industrial uses based on its resistance to harsh chemicals and high temperatures. PFOS is used in metal plating and finishing as well as in various commercial products. PFOS was previously used as a major ingredient in aqueous film forming foams for firefighting and training, and PFOA and PFOS are found in consumer products such as stain resistant coatings for upholstery and carpets, water resistant outdoor clothing, and grease proof food packaging. Although the use of PFOA and PFOS has decreased substantially, contamination is expected to continue indefinitely because these substances are extremely persistent in the environment and are soluble and mobile in water. More information can be found at: [https://www.state.nj.us/dep/wms/bears/docs/2019-4-15-FAQs_PFOA-PFOS-websites-OLA%204-24-19SDM-\(003\).pdf](https://www.state.nj.us/dep/wms/bears/docs/2019-4-15-FAQs_PFOA-PFOS-websites-OLA%204-24-19SDM-(003).pdf)

Sources of Lead in Drinking Water - The U.S. Environmental Protection Agency (USEPA) estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water. Lead is rarely found in the source of your drinking water but enters tap water through corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing materials. These materials include lead-based solder used to join copper pipes, brass, and chrome-brass faucets, and in some cases, service lines made of or lined with lead. New brass faucets, fittings, and valves, including those advertised as “lead-free”, may still contain a small percentage of lead, and contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 0.25 percent lead to be labeled as “lead free”. However, prior to January 4, 2014, “lead free” allowed up to 8 percent lead content of the wetted surfaces of plumbing products including those labeled National Sanitation Foundation (NSF) certified. Visit the NSF website at www.nsf.org to learn more about lead-containing plumbing fixtures. Consumers should be aware of this when choosing fixtures and take appropriate precautions. When water stands in lead service lines, lead pipes, or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.

Health Effects of 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. Essex Fells 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 is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>. Please call 973-226-3400 to find out how to get your water tested for lead. Testing is essential because you cannot see, taste, or smell lead in drinking water. You can find out more about how to get your child tested at <https://www.state.nj.us/health/childhoodlead/testing.shtml>.

Lead Service Lines - In July 2021, P.L.2021, Ch.183 (Law) was enacted, requiring all community water systems to replace lead service lines in their service area within 10 years. Under the law, the Essex Fells Water Utility is required to notify customers, non-paying consumers, and any off-site owner of a property (e.g., landlord) when it is known they are served by a lead service line.

Waivers - 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. Our system received monitoring waivers for asbestos and synthetic organic chemicals.

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:

Non-Detects (ND) - laboratory analysis indicates that the contaminant.

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.

Parts per trillion (ppt) or nanogram per liter - one part per trillion corresponds to one minute in 20,000 years, or a single penny in \$100,000,000

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

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

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.

Organic Compounds - Chemicals associated with carbon or living matter.

Action Level - 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 - 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.

Secondary Contaminant- Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

Recommended Upper Limit (RUL) – Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste or appearance. RULs are recommendations, not mandates.

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 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

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.

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.

New Jersey American Water – Short Hills System is a public community water system consisting of 25 wells, 4 surface water intakes, 12 purchased ground water sources, 3 purchased surface water sources. Source water comes from the following aquifers and / or surface water bodies: Passaic River, Brunswick Aquifer System, and Canoe Brook.

New Jersey American Water – Short Hills System -2022 Test Results						
PWS ID # NJ0712001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Microbiological Contaminants:						
Total Organic Carbon	N	Range = 43 – 64% (35 – 45% Required)	ppm	N/A	TT % of removal	Naturally present in the environment.
Turbidity	N	Range = 0.01 – 0.20 100% samples < 0.3	NTU	0	TT = % of samples <0.3	Soil runoff
Inorganic Contaminants:						
Nitrate (as Nitrogen)	N	Range = ND – 0.4 Highest detect = 0.4	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Microbiological Contaminants:						
Total coliform Bacteria	N	Range = ND – 1.5% Highest Detect = 1.5%	N/A	0	5% of monthly samples	Naturally present in the environment
Radioactive Contaminants:						
Gross Alpha Test results Yr. 2018	N	Range = ND – 13.1 Highest detect = 13.1	pCi/1	0	15	Erosion of natural deposits
Combined Radium 228 & 226 Test results Yr. 2018	N	Range = ND – 3.19 Highest detect = 3.19	pCi/1	0	5	Erosion of natural deposits
PFAS Per- and Polyfluoroalkyl Substances:						
PFOA Perfluorooctane Acid	N	Range = ND - 6 Highest detect = 6	ppt	N/A	14	Used in the manufacture of fluoropolymers
Regulated Disinfectants:		Level Detected		MRDL		MRDLG
Chlorine Water additive used to control microbes		Range = 0.4 – 1.0 ppm Average = 1.0 ppm		4.0 ppm		4.0 ppm
Secondary Contaminant		Level Detected		Units		RUL
Manganese		Range = ND - 83		ppb		50

New Jersey American Water exceeded the secondary Recommended Upper Limit (RUL) for Manganese. The secondary (RUL) for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water. Manganese is a naturally occurring element in soil, groundwater, and some surface waters. Manganese is considered harmless to health however, it may give water an off taste or color, cause splotchy yellow stains on laundry, and clog water systems.

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. 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. New Jersey American Water conducted a study of their water supply to determine the amount of Cryptosporidium in untreated raw source water. Cryptosporidium range of detections = 0 to 0.182

Special considerations regarding children, pregnant women, nursing mothers, and others:

Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating a drinking water standard if these effects occur at lower levels than other health effects of concern. If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In the cases of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

If you have any questions about this report or concerning your water utility, please contact William Ryden at 973-226-3400. Always feel free to attend one of the regularly scheduled Borough Council meetings. Meetings are held on the first and third Tuesdays of each month (July and August, third Tuesday only) at 7:00 p.m., in Borough Hall at 255 Roseland Avenue.

Susceptibility Ratings for Essex Fells Water Utility Sources

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides 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 eight 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.

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 - 16		11	5	8	8			3	13	16			4	11	1	3	13		16			4	12	

- 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.

Susceptibility Ratings for NJ American Water Company - Short Hills Division Sources

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 - 25	1	21	3	13	12			6	19	17		8	10	11	4		25		25			3	22	
Surface water intakes - 4	4			2	2			2	2		4		4				4			4	4			