



ANNUAL WATER QUALITY REPORT

Reporting Year 2023



Presented By
**East Lyme Water and
Sewer Commission**



PWS ID#: CT0450011



Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2023. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information because informed customers are our best allies.

Revised Total Coliform Rule Violation

On July 21, 2023, a routine bacteriological sample of an East Lyme water well was found to be positive for *E. coli*. This was a sample of water prior to treatment for consumption. As a precaution, the well was immediately shut down, and DPH was notified. At its direction, five repeat bacteriological samples were collected for analysis and delivered to the regulatory lab the same day. Only one of the five samples was analyzed on July 22 instead of the five that were delivered. This sample was negative for bacteria and *E. coli*, but because not enough samples were analyzed within 24 hours of the original sample, additional sampling was required.

Five new samples were collected on July 24 and analyzed on July 25. All five came back negative for bacteria and *E. coli*. The production well was cleared to resume operation on July 25 and has remained in production since. This is a raw water source that is routinely analyzed before the treatment and disinfection process. No bacteria or *E. coli* was detected in the treated drinking water that entered the distribution system on the day of sampling. The affected well was kept offline until it was approved to resume operation.

Water Treatment Process

The treatment process consists of a series of steps. First, raw well water is pumped from our aquifers and sent to pressurized filter vessels, where chlorine is added for oxidation and removal of iron and manganese concentrations that are naturally occurring in the water. At this point, the water is also filtered through layers of fine carbon and silicate sand. As smaller suspended particles are removed, turbidity (a measurement of water clarity) is significantly reduced, and clear water emerges.

Chlorine is added again as a precaution against any bacteria that may still be present and to maintain a safe residual in the distribution system. We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste. Finally, pH is adjusted to the proper level and fluoride is added to prevent tooth decay and promote healthy teeth. The treated water is then pumped through roughly 114 miles of distribution piping into three water towers across town and your home or business.

Important Health Information

Sources of lead in drinking water include corrosion of household plumbing systems and erosion of natural deposits. 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.

Sources of copper in drinking water include corrosion of household plumbing systems, erosion of natural deposits, and leaching from wood preservatives. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

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. Environmental Protection Agency (U.S. EPA)/Centers for Disease Control and Prevention (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 at (800) 426-4791.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the fourth Tuesday of each month at 7:00 p.m. at East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please contact Ben North, Chief Operating Officer, at (860) 691-4104 or watersewer@eltownhall.com.

Source Water Assessment

The Connecticut Department of Public Health (DPH), in cooperation with the Department of Energy and Environmental Protection, completed source water assessments for all of the East Lyme Water Department's public water supply sources. The sources were rated based on their environmental sensitivity, potential risk factors, and source protection needs. The rating does not necessarily imply poor water quality but indicates susceptibility to potential sources of contamination.

The Bride Lake well field, which includes Wells 2A, 3A, and 3B, received a low overall susceptibility rating. The remaining well fields - which include Gorton Pond (Wells 1A and 6), Dodge Pond (Well 4A), and Well 5 - received moderate overall susceptibility ratings. New London's Lake Konomoc reservoir received a low susceptibility rating. The source water assessments are available at <https://www.epa.gov/waterdata/how-my-waterway>. Go to Source Water Protection, then to Connecticut's SWAP Assessment Reports and Findings.

Where Does My Water Come From?

Town of East Lyme customers depend on a water supply from seven groundwater sources. Wells are located throughout the town in two separate aquifers, the Pattagansett and Bride Brook. The water from six of the wells is filtered to remove iron and manganese and then treated for pH adjustment, chlorine disinfection, and fluoridation. Well 2A is the sole well in town that is similarly treated but not filtered for iron and manganese. A sequestering agent is added to the finished water of Well 2A to mitigate issues arising from iron and manganese in the unfiltered water. A construction project is currently underway and should be completed by summer 2024 to filter this source as well.

Treated water from these wells is delivered through an extensive distribution system, including three water storage tanks and 10 booster stations. During the summer months, East Lyme's supply is supplemented with water from the City of New London through a distribution network including over three miles of water main, an elevated water storage tank, and two pumping stations. New London's water comes from lakes and reservoirs in a protected watershed located in Waterford, Montville, and Salem. The principal reservoir is Lake Konomoc. The water is processed using coagulation, flocculation, sedimentation, and carbon filtration and treated for pH adjustment, chlorine disinfection, fluoridation, and corrosion control. To learn more about the watersheds, please visit U.S. EPA's How's My Waterway at epa.gov/waterdata/how-my-waterway.

Source Water Protection

Level A aquifer mapping has been completed for all of our water supply sources and approved by the state regulatory agencies. The mapping more accurately identifies the zone of influence for our water supply wells and is used to regulate land use activities that may affect water quality.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use four to six gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.
- The smart meter that we recently installed in your home sends alerts when continuous consumption, or a leak, is detected. We then send postcards to customers to alert them of this condition before the next billing cycle when the meter is read, which saves you money and conserves water.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water and removing lead pipes, but we cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, or doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute-accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact Ben North, Chief Operating Officer, at (860) 691-4104. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink. We are required to report our highest level detected of a given substance, so your overall exposure to a substance will be less than these detected levels because our system is blended with many sources of water that may have lower or undetectable levels of the same substance. Our minimal goal is to keep all substances below maximum levels, but we strive to reduce these substances to the lowest possible level using the treatment techniques available to us.

The state recommends monitoring 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.

We participated in the fifth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR5) program by performing additional tests on our drinking water. UCMR5 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water to determine if it needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data is available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

For more information about UCMR5 and our PFAS test results, please visit <https://eltownhall.com/government/departments/water-sewer-utilities/learn-about-pfas/>



Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2023	2	2	0.044	0.008–0.044	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2023	50 ¹	0	33	ND–33.0	No	Decay of natural and human-made deposits
Chlorine (ppm)	2023	[4]	[4]	1.56	0.2–1.56	No	Water additive used to control microbes
Fluoride (ppm)	2023	4	4	1.46	0.28–1.46	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2023	60	NA	10.43 ²	3.60–16.30 ²	No	By-product of drinking water disinfection
Nitrate (ppm)	2023	10	10	4.40	0.2–4.40	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2023	80	NA	29.25 ²	12.70–28.10 ²	No	By-product of drinking water disinfection
Turbidity ³ (NTU)	2023	TT	NA	0.85	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 %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2023	1.3	1.3	0.45	ND–0.77	0/130	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2023	15	0	1	ND–6	0/130	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2023	50	NA	370	ND–370	No	Leaching from natural deposits
pH (units)	2023	6.5-8.5	NA	8.20	7.00–8.20	No	Naturally occurring

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Calcium (ppm)	09/12/2023	12.4	5.59–12.4	Naturally occurring
Magnesium (ppm)	10/11/2023	4.28	0.86–4.28	Naturally occurring
Perfluorobutanesulfonic Acid [PFBS] (ppt)	2023	4.8	ND–4.8	NA
Perfluorohexanoic Acid [PFHxA] (ppt)	2023	5.4	ND–5.4	NA
Perfluorooctanesulfonic Acid [PFOS] (ppt)	2023	7.2	ND–7.2	NA
Perfluorooctanoic Acid [PFOA] (ppt)	2023	9.2	ND–9.2	NA
Perfluoropentanoic Acid [PFPeA] (ppt)	2023	5.5	ND–5.5	NA
Sodium (ppm)	06/13/2023	43.5	16.4–43.5	Naturally occurring; Road salt

¹The MCL for beta particles is 4 millirems per year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

²Amount Detected is the highest locational running annual average. Range indicates the lowest and highest samples detected for the year.

³Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality and the effectiveness of disinfectants.



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.

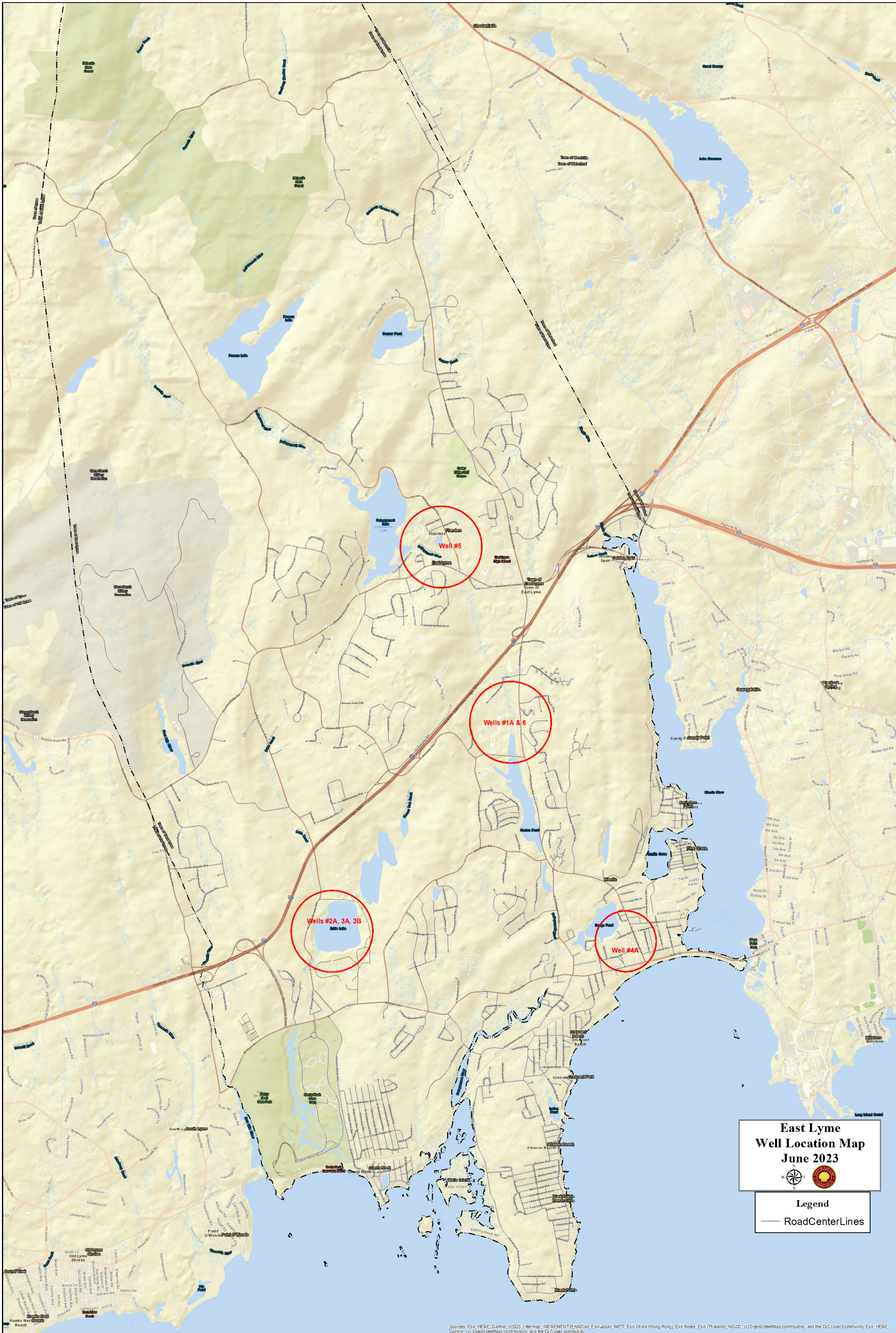
For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

East Lyme Water 2023 Water Quality by Well Site



The below data is meant to supplement the 2024 Consumer Confidence Report and provide location specific water quality data to East Lyme Water customers. Although the water is blended in the distribution system, it may be helpful to see the water quality data by source. Water Treatment Plant and well locations can be seen on the attached map titled: " Well Location Map June 2023".

Name	MCL [MRDL]	MCLG [MRDLG]	Well 1A & 6 WTP			Well 2A			Bride Brook WTP (Well 3A & 3B)			Well 4 WTP			Well 5 WTP		
ID#			51321			66			67			629			630		
			Average Amount	Highest Amount	Range	Average Amount	Highest Amount	Range	Average Amount	Highest Amount	Range	Average Amount	Highest Amount	Range	Average Amount	Highest Amount	Range
Chlorine Residual (ppm)	4	4	0.73	1.52	0.31-1.52	0.63	1.28	0.23-1.28	0.76	1.42	0.30-1.42	0.61	1.45	0.2-1.45	0.78	1.56	0.27-1.56
Chloride (ppm)	250	NA	59.71	64.90	46.4 - 64.9	24.49	32.90	21.6 - 32.9	44.79	46.60	42.5 - 46.6	71.16	80.00	64.1 - 80	30.48	32.6	29.4 - 32.6
Iron (ppm)	300	NA	0.01	0.07	0 - 0.072	0.01	0.029	0 - 0.029	0.02	0.05	0 - 0.05	0.01	0.045	0 - 0.045	0.01	0.04	0 - 0.044
Manganese (ppm)	50	NA	0.01	0.01	0 - 0.01	0.40	0.53	0.14 - 0.527	0.01	0.01	0 - 0.01	0.01	0.047	0 - 0.047	0.01	0.01	0 - 0.01
Hardness (ppm as CaCO3)	NA	NA	44.53	48.10	39.3 - 48.1	27.45	31.10	24.3 - 31.1	25.97	27.70	21.1 - 27.7	46.73	50.30	40.8 - 50.3	26.93	28.60	24 - 28.6
Turbidity (NTU)	NA	NA	0.18	0.20	0.05 - 0.2	0.25	0.80	0.1 - 0.8	0.16	0.20	0.05 - 0.2	0.24	0.85	0.1 - 0.85	0.17	0.20	0.1 - 0.2
pH	NA	6.5-8.5	7.26	7.87	7.00-7.87	7.36	7.86	7.00-7.86	7.23	8.20	7.00-8.20	7.32	7.85	7.00-7.85	7.32	7.78	7.00-7.78
Sodium (ppm)	NA	NA	31.77	35.20	29.2 - 35.2	18.38	22.70	16.5 - 22.7	27.76	32.60	24.5 - 32.6	38.41	43.50	31.6 - 43.5	21.00	23.20	18 - 23.2
Sulfate (ppm)	250	NA	11.17	15.20	9.2 - 15.2	7.54	8.00	7.3 - 8	7.72	8.20	7.02 - 8.2	10.67	11.30	10 - 11.3	9.55	9.90	9.07 - 9.9



**East Lyme
Well Location Map
June 2023**



Legend
— RoadCenterLines

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Scale

