



2021 Water Quality Report

MANCHESTER WATER DEPARTMENT

The Manchester Water Department is pleased to provide our customers with this annual report on the drinking water supplied to the residents of Manchester and our customers in portions of Glastonbury, Vernon and South Windsor. The information contained in this brochure is compiled from data collected during 2021 (except where noted) and explains where your water comes from, what tests were performed to ensure the safety of your water and where you can get more information about your water supply. We hope you will find this publication both interesting and helpful.

We want to keep you informed about the quality of your drinking water.

Attention: This report contains important information about your drinking water. Please have someone translate for you or speak to someone that understands it well.



Spanish:

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

French:

Ce rapport contient des informations importantes à propos de votre eau potable. Demander à quelqu'un de traduire ces informations pour vous ou discuter avec une personne qui comprend ces informations.

Punjabi:

ਇਸ ਰੀਪੋਰਟ ਵਿਚ ਤੁਹਾਡੇ ਪੀਣ ਵਾਲੇ ਪਾਣੀ ਬਾਰੇ ਜ਼ਰੂਰੀ ਜਾਣਕਾਰੀ ਹੈ। ਕਿਸੇ ਕੋਲੋਂ, ਜਿਸ ਨੂੰ ਸਮਝ ਆਉਂਦੀ ਹੋਵੇ ਇਸ ਦਾ ਅਨੁਵਾਦ ਕਰਵਾ ਲਵੋ ਜਾਂ ਉਸ ਨਾਲ ਗੱਲ ਕਰੋ।

Hindi:

यह रिपोर्ट में आपके पीने वाले पानी के बारे में जरूरी जानकारी है। किसी से जिसे इसका अनुवाद करना आता हो उस से बात करें।

If you have questions about this report or your water supply, contact us directly at (860) 647-3217 to reach the Laboratory Director, Brenda Williams. For general questions please call (860) 647-3115. If you wish to participate in decisions that may affect the quality of the water, the Board of Directors meets at Lincoln Center on the first Tuesday of each month. Meetings are currently being conducted in a hybrid fashion. For dates and times, and for information on virtual attendance please contact the Mayor's office at (860) 647-3123 or access the information via our webpage at bod.townofmanchester.org.

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Manchester CT 06045-0191

waterandsewer.townofmanchester.org

Sources of Drinking Water

Manchester's water supply includes both surface water from reservoirs and groundwater from wells. There are seven surface water reservoirs and ten active wells. Globe Hollow, Porter, Lydall #1 and #2 and Howard reservoirs are located in Manchester; Risley reservoir is located in Vernon and Buckingham reservoir is located in Glastonbury. The reservoirs supply the majority of water to our customers. The groundwater sources augment the surface water supply and are comprised of ten wells which are located throughout Manchester on New State Road, Love Lane, Parker Street, Progress Drive, Charter Oak Street and Fern Street.

The water from the reservoirs is piped to the water treatment plant on Spring Street, where the water is processed before it is sent into the water distribution system. The treatment process is comprised of flocculation, sedimentation, and filtration to remove impurities and disinfection to kill microbes that can cause illness. In 2011 an ozonation system was added to improve taste and odor and to provide an additional barrier of protection against waterborne disease carrying organisms. Lime is added to raise the pH and zinc phosphate is added to prevent corrosion of plumbing. The CT Department of Health requires that fluoride be added to help prevent tooth decay. Since groundwater supplies are naturally purified as they filter through the soil, little additional treatment is required. Treatment of the groundwater supplies consists of disinfection, fluoridation and corrosion control. The Parker Street and New State Road Wells are also treated to remove low levels of volatile organic compounds.

Source Water Assessment Program

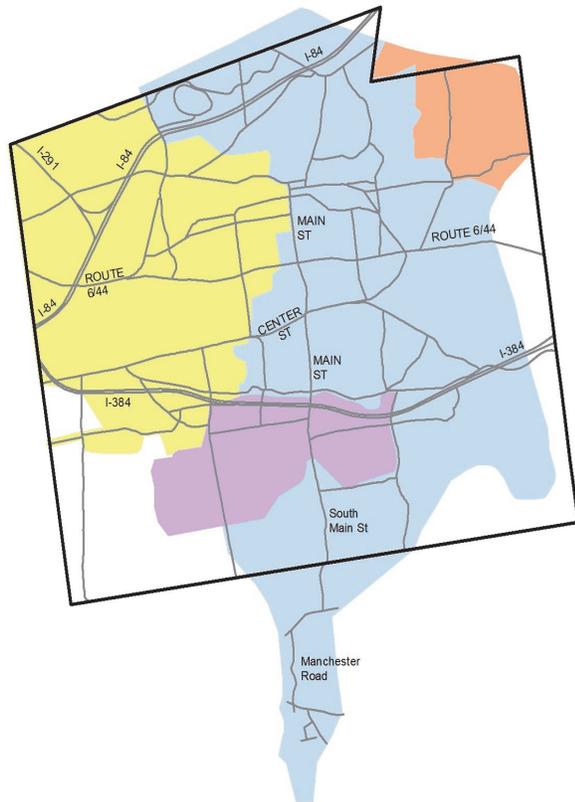
A source assessment of the various water supplies used by the Manchester Water Department was completed by the Connecticut Department of Public Health, Drinking Water Division. The assessment reports are intended to provide an understanding of the potential risk of contamination based upon specific risk factors for surface and groundwater sources. Manchester's overall susceptibility to potential sources of contamination was considered to be low for its surface water supplies because more than fifty percent of the watershed is owned by the Town and is preserved as open space. The overall susceptibility to potential sources of contamination for the groundwater supplies was considered to be high because most land around the supplies is not owned by the Town. To control this risk the Town has adopted the regulations described in the Aquifer Protection Program which are designed to protect the groundwater supplies. These regulations protect critical aquifer zones from pollution by managing land use. Protection requires coordinated responsibilities shared by the state, municipality and water companies to ensure a safe and plentiful supply of public drinking water for present and future generations. These regulations can be viewed on the Town's website at <http://planning1.townofmanchester.org/index.cfm/development-applications-regulations-and-maps/aquifer-protection-agency/>

The EPA wants you to know that...

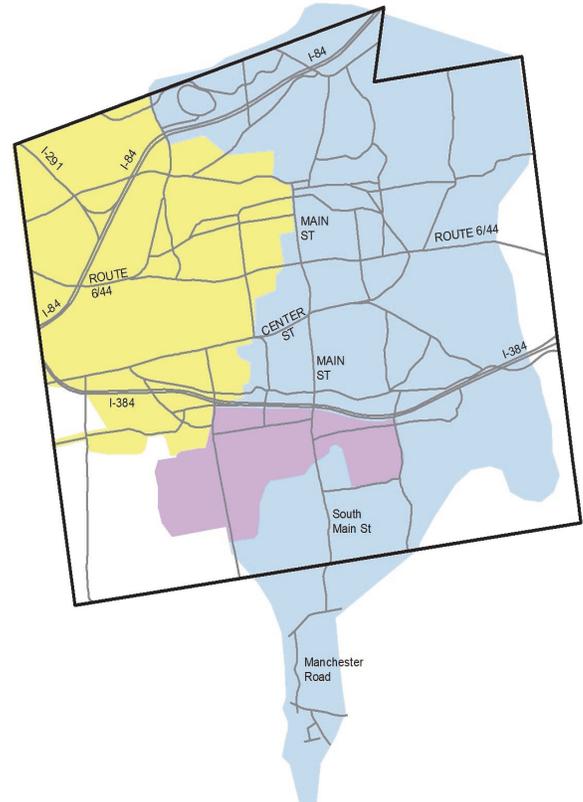
Sources of drinking water (both tap and bottled) include lakes, ponds, reservoirs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in untreated source water include: *Biological contaminants*, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife; *Inorganic contaminants*, such as salts and metals, which can be naturally occurring or result from urban runoff, farming or industry; *Pesticides and herbicides*, which may come from a variety of sources such as agriculture or residential uses; *Organic chemicals*, including synthetic and volatile organics, which are by-products of industrial processes and can come from gas stations, urban storm-water runoff and septic systems; *Radioactive materials*, which can be naturally occurring or the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants that are allowed in water provided by public water systems. The Food and Drug Agency establishes limits of contaminants in bottled water. All 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.

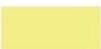
More information about contaminants and potential health effects can be obtained from the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or website at <http://water.epa.gov/drink/hotline/index.cfm>.

Summer Water Supply



Winter Water Supply



-  Globe Hollow Water Treatment Plant
-  Globe Hollow Water Treatment Plant, Parker Street and Charter Oak Wells
-  Globe Hollow Water Treatment Plant, Progress Drive and Charter Oak Wells
-  New State Road and/or Love Lane Wells

The Water Distribution System

Drinking water flows to your home via a two hundred and fifty seven mile network of water mains, five booster pumping stations and ten distribution system storage tanks. A new pump station was added to accommodate Bayberry Crossing. Because of this interconnected system, water from more than one source may be delivered to some neighborhoods. The source of water is dependent upon your location in the distribution system *and* the time of year. Many of our customers experience a seasonal change in the water they receive due to the way we operate our water supply. To find out the source of your water please refer to the maps on the following page.

The water department uses both surface and groundwater throughout the year. Due to typically lower reservoir volumes, and increased demand during the summer months due to sprinkler systems and swimming pools, the water supply contains proportionately more groundwater in the summer. However, some residents receive only groundwater (yellow on the water supply map), and some residents receive nearly all surface water (purple on the water supply map). The maps represent an estimate of the hydrology and illustrate the seasonal changes in water supply and are an approximation of actual blending conditions.

By the numbers...

The Water Department produced a total of **1.9 billion** gallons of water in 2021, or approximately **5 million gallons per day**. On June 8, 2021 the department supplied 7.48 million gallons of water which was the highest single production day of the year. Overall, fifty three percent of the total water produced was supplied from reservoirs and the remaining forty seven percent was supplied by groundwater sources.

Water Quality Monitoring Program

Manchester's water is routinely monitored for microorganisms, organic chemicals, inorganic chemicals and pesticides. The following tables contain important information about your water quality. The tables represent data from 2019 and only include substances that were found in the water. Not all substances are tested for every year. The results of these tests are reported to the State of Connecticut Department of Health. **In 2021 the Water Department processed approximately 4,200 water samples and over 27,000 analyses and was in compliance with all state and federal drinking water standards.** The tables correspond to the areas shown on the maps. To read the tables, find your location on the map to determine your water source, then refer to the appropriate column in the table to find the water quality results for your area.

Potential Sources of Contaminants	
Contaminant	How it gets in the water
Asbestos	Decay of asbestos cement water mains
Barium	Erosion of natural deposits
Chloride	Natural deposits, runoff from road salting
Ethyl Benzene	Discharge from petroleum refineries
Fluoride	Water additive which reduces tooth decay and promotes strong teeth
Nitrate as N	Erosion of natural deposits; runoff from fertilizer use or septic systems
Sodium	Runoff from road salting, natural deposits
Tetrachloroethylene	Discharge from factories and dry cleaners
1,1,1-Trichloroethane	Discharge from metal degreasing sites
Trichloroethylene	Discharge from metal degreasing sites
1,1-Dichloroethylene	Discharge from industrial chemical
Total Organic Carbon	Naturally present in the environment
Turbidity	Soil runoff
Xylene	Discharge from chemical and petroleum factories

Definitions of terms and abbreviations used in this report:

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. MCL's are set as close to the MCLG 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.

MFL = Million Fibers per Liter (longer than ten micrometers)

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 for the sample site indicated

ND = Not detected

NL = Notification Level - The level of a contaminant that if exceeded requires public notification by a public water system to its customers.

NTU = Nephelometric turbidity units, used to measure the clarity of water and evaluate the treatment process.

pCi/L = Picocuries per liter, a measure of radioactivity

ppb = Parts per billion (for comparison, 1 cent in \$10,000,000)

ppm = Parts per million (for comparison, 1 cent in \$10,000)

TT = Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.

Special Health Considerations:

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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. For EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants reference the following sources:

Safe Drinking Water Hotline: 1-800-426-4791

EPA website: <http://water.epa.gov/drink/hotline/index.cfm>

Regulated Contaminants - Average Levels and Range Detected in 2021 and 2020 where noted

The following were present at levels below State and Federal allowable limits.

Contaminant	MCLG	MCL	Units	Globe Hollow Water Treatment Plant	Blend of Globe Hollow, Parker St. and Charter Oak Wells	Blend of Globe Hollow, Progress Drive and Charter Oak Wells	New State Road and Love Lane Wells	Meets EPA Drinking Water Standard?
Barium	2	2	ppm	0.03	0.11 *	0.15 *	0.30 *	YES
Chloride	250	250	ppm	33.8 25—50	49 25 - 104	54 25 - 98	193 165 - 226	YES
Chromium	100	100	ppb	ND	ND *	ND *	1.1 * 1.0 - 1.1	YES
Fluoride	4	4	ppm	0.75 0.58 - 0.87	0.73 0.39 - 1.4	0.73 0.39 - 1.4	0.73 0.34 - 1.1	YES
Nickel	100	100	ppb	ND	1.0 * ND — 1.0	ND * ND — 1.0	1.0 * 1.0 – 1.0	YES
Nitrate as N	10	10	ppm	0.25 ND - 0.45	0.85 <0.1 - 3.1	0.94 <0.1 – 2.3	2.70 2.3– 4.0	YES
Sodium	None	NL=28	ppm	17 N/A	32 * 27 - 57	31 * 27 – 57	82*, *** 81 - 103	YES
1,1 Dichloroethylene	7	7	ppb	ND	ND	ND ND– 0.7**	ND	YES
Trichloroethylene	0	5	ppb	ND	ND	ND ND - 1.1 **	ND	YES
1,1,1 Trichloroethane	0	200	ppb	ND	ND	ND ND – 0.52 **	ND	YES
Turbidity Average level for area	None	TT=5	NTU	0.30 0.09 - 0.75	0.23 0.06– 0.75	0.22 0.06 - 0.75	0.15 0.07 - 0.67	YES
Filter Plant highest single value and % <0.3 NTU	None	TT= 95% of samples must be <0.3 NTU	NTU	0.25 100% < 0.3	NA	NA	NA	YES
Total Organic Carbon	None	TT=Ratio ≥ 1.0	-	1.57 1.38 — 1.83	NA	NA	NA	YES

* Compiled with data from 2020

** Detected in Progress Road Only

*** Sodium Notice — >100 mg/L — Love Lane Well Only

Customers receiving water from Love Lane Well are consuming water with a sodium concentration above the State's sodium notification level of 100 parts per million (ppm). If you have been placed on a sodium restricted diet, please inform your physician of the sodium level in your area of Manchester. The average dietary intake of sodium in the United States is 4000 to 6000 parts per million each day.

Regulated Contaminants: System-wide testing

Contaminant	MCLG	MCL	Level Detected	Major Sources in Drinking Water	Meets EPA Drinking Water Standard?
Asbestos	None	7 MFL	ND **	Decay of asbestos cement water mains	YES
Chlorine	4 ppm (MRDLG)	4 ppm (MRDL)	0.74 Range 0.05 - 1.4	Water additive used to control microbes	YES
Total Coliform Bacteria	0	Coliform bacteria not present in more than 5 % of monthly samples	0 % (Highest monthly %) 0 % (% of 2021 samples)	Naturally present in the environment	YES
E. Coli	0	0	0	Human or animal fecal waste.	YES
Total Trihalomethanes	0 ppb	80 ppb as LRAA	55 ppb highest LRAA* Range 14 - 55	Byproduct of drinking water disinfection	YES
Haloacetic Acids	0 ppb	60 ppb	19 ppb highest LRAA* Range 6 - 19	Byproduct of drinking water disinfection	YES

- *LRAA (Locational Running Annual Averages) are calculated using 2020 and 2021 data.
- ** Asbestos data is from 2020.

Regulated Contaminants: System-wide testing - Radiological Analyses

Contaminant	MCLG	MCL	Level Detected	Major Sources in Drinking Water	Meets EPA Drinking Water Standard?
Alpha Emitters	0	15 pCi/L	0.3— 2	Erosion of natural deposits	YES
Comb. Radium (226/228)	0	5 pCi/L	0.4—1	Erosion of natural deposits	YES
Uranium	0	5 pCi/L	ND	Erosion of natural deposits	YES
Gross Beta Particles	0	50 pCi/L**	ND – 0.6	Decay of natural and man-made deposits	YES
Strontium-90	0	8 pCi/L	0.1—0.2	Erosion of natural deposits	YES
Tritium	0	20,000 pCi/L	0 –89	Erosion of natural deposits	YES

- ** The MCL is 4 mrem/year; results were below 50pCi/L, which is below the threshold for compliance calculations.
- Radiological testing performed 2020.

Regulated Contaminants: System-wide testing — Lead and Copper					
Contaminant	MCLG	MCL	Level Detected	Major Sources in Drinking Water	Meets EPA Drinking Water Standard?
Lead— 90th % Calculation	0 ppb	AL = 15 ppb	1.4 ppb (2 samples above AL)	Corrosion of household plumbing systems, erosion of natural deposits	YES
Copper- 90th % Calculation	1.3 ppm	AL = 1.3 ppm	0.12 ppm (0 samples above AL)	Corrosion of household plumbing systems, erosion of natural deposits	YES

The above results were obtained during triennial compliance sampling between July and September of 2020.

Sources of Lead In Drinking water: Lead found in drinking water is primarily from materials and components associated with service lines and home plumbing, including fixtures and lead solder. Solder and other plumbing components not designated “lead-free” were banned as part of the Safe Drinking Water Act Amendments of 1986. This ban was further strengthened in 2014, before which fixtures designated lead-free could contain up to 8 percent lead.

Older homes, especially those built before 1945 may be serviced by lead pipes.

Lead services were already being phased out of use in the 1930s, but there were limited instances of its use into the 1940s when materials were scarce. These service pipes connect to the water main in the street. The pipe that connects the main and the curb stop (the shut off near the property line) is town owned. The portion that is between the curb stop and building is owned by the property owner. Older fixtures may also be a source of lead. Galvanized iron pipe leading into the home can also be a potential source of residual lead if there was previously contact with lead.

Information on Health Effects of Lead from the EPA: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and children who drink water containing lead could have decreases in IQ and attention span and increases in learning and behavior problems. Lead exposure among women who are pregnant increases prenatal risks. Lead exposure among women who later become pregnant has similar risks if lead stored in the mother’s bones is released during pregnancy. Recent science suggests that adults who drink water containing lead have increased risks of heart disease, high blood pressure, kidney, or nervous system problems.

What you can do to Reduce Lead Exposure: The Manchester Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water has been sitting for several hours, minimize the potential for lead exposure by flushing the 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. Further information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Information on Copper in Drinking Water: 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.

What the Manchester Water Department is doing to Reduce Lead and Copper Exposure: Phosphate is added to the water to inhibit corrosion from lead and copper. We are also replacing any town-owned lead service lines and lead connectors.

What’s New: We are working on compiling a database of all of the piping material throughout Manchester, including the customer side, and could use your help. We may be reaching out to determine what materials are servicing your home. We are encouraging any homeowner with a lead service pipe going into their home to replace it— we will test your water before and after the replacement. If the attached Town-owned service is also lead, we will replace that as well.

Unregulated Contaminants

Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring is to help the EPA make a determination whether they should have a standard, which is based on prevalence of the contaminant, the ability to remove the contaminant through existing treatment technology, and the associated health effects of the contaminant. The results of detected contaminants are shown in the tables below.

Federal testing of unregulated contaminants is coordinated by the EPA to evaluate the levels specific contaminants over the country as a whole. This is done through their UCMR (unregulated contaminant monitoring rule) program. Detected contaminant results follow in the tables below. Being unregulated, these contaminants do not have an MCL. While these contaminants were studied nationwide as part of UCMR4 conducted from 2018 –2020, the data below is reflective of routine monitoring completed in 2021.

Contaminant	Units	Globe Hollow Water Treatment Plant	Blend of Globe Hollow and Parker St. and Charter Oak Wells	Blend of Globe Hollow and Progress Drive and Charter Oak Wells	New State Road and Love Lane Wells	Major Sources in Drinking Water
Sulfate	ppm	27 Range 19 - 34	23 Range 11 - 34	20 Range 12 - 34	27 Range 19 - 30	Natural deposits
Bromo-dichloro-methane	ppb	4.0 Range 1.7 — 6.3	2.6 Range 1.1 - 4.1	2.1 Range 0.7 - 2.5	ND Range ND-ND	Byproduct of drinking water disinfection
Chloro-dibromo-methane	ppb	0.8 Range ND— 1.44	0.6 Range ND - 1.0	0.3 Range ND - 0.6	0.5 Range ND - 0.6	Byproduct of drinking water disinfection
Chloroform	ppb	10 3.2 — 16.2	6.5 Range 2.1 — 10.5	4.0 Range 1.3 - 6.5	ND Range ND - 1.0	Byproduct of drinking water disinfection
Bromoform	ppb	ND	ND	ND	0.7 Range 0.5— 0.8	Byproduct of drinking water disinfection
Dieldrin	ppb	NA	ND Range ND - 0.039 Parker Street Only	NA	ND ND - 0.038 Love Lane	Run-off from pesticide use
Manganese	ppb	8.0 Range ND- 26	5.2 ND — 26	3.2 ND — 26	7.3 ND — 28	Natural deposits

Conservation Information

Water Conservation Tips *(Courtesy of the Environmental Protection Agency)*

- * Repair all leaks. A leaky toilet can waste 200 gallons of water per day. To detect leaks in the toilet, add food coloring to the tank. If the colored water appears in **the bowl**, the toilet is leaking.
- * When using a hose, control the flow with an automatic shut-off nozzle.
- * Water only when necessary. The most effective time is early in the morning; never on windy, rainy or very hot days. Use water efficient, slow soaking irrigation systems. Direct the water onto your plants, not the driveway or sidewalk.
- * Consider replacing your five-gallon per flush toilet with an efficient 1.6-gallon unit. This will permanently cut your water consumption by 25%. Purchasing a high efficiency washing machine will save over 50% in water and energy use.

Unregulated Contaminants — Continued

Contaminant	MCL	Units	Average Levels Detected, Range	Major Sources in Drinking Water
Bromochloroacetic Acid	Not Regulated	ppb	1.85 1.1 — 2.6	Byproduct of drinking water disinfection
Bromodichloroacetic Acid	Not Regulated	ppb	1.70	Byproduct of drinking water disinfection
Chlorodibromoacetic Acid	Not Regulated	ppb	0.54	Byproduct of drinking water disinfection
<i>The following contaminants are also included as an aggregate on page 5 as they comprise the haloacetic acids we currently test for under the Stage 2 Disinfection Byproduct Rule. While there are not individual MCLs for each component, collectively their MCL is 60 ppb. For contaminants measured one time, there is just one value.</i>				
Dibromoacetic Acid	Not Regulated	ppb	0.30	Byproduct of drinking water disinfection
Dichloroacetic Acid	Not Regulated	ppb	5.5	Byproduct of drinking water disinfection
Monochloroacetic Acid	Not Regulated	ppb	0.59 ND — 3.2	Byproduct of drinking water disinfection
Trichloroacetic Acid	Not Regulated	ppb	5.1	Byproduct of drinking water disinfection

PFAS Monitoring — Baseline Testing - Aggregate of 2019, 2020 data

Information about PFAS: Per- and polyfluoroalkyl substances are a group of over 4000 manufactured chemicals collectively referred to as PFAS. They have been used in a variety of ways, including the manufacturing of non-stick surfaces, waterproof material, stain-resistant materials, food packaging, and firefighting foam for petroleum fires. The EPA has issued a health advisory of 70 parts per trillion (ppt) in drinking water for the sum of two of the chemicals: perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The State of CT has developed an action level for the sum of five chemicals in the class: PFOA, PFOS, perfluorononanoic acid (PFNA), perflurohexane sulfonate (PFHxS), and perfluoroheptanoic acid (PFHpA).

We surveyed all of our entry points into the water distribution system for 18 PFAS compounds, as well as assorted sites within the distribution system. This builds on the preliminary analysis conducted through prior monitoring of unregulated contaminants. All PFAS compounds present were significantly lower than the current advisory and action levels. We are actively investigating PFAS mitigation to explore reducing levels further.

Parts per Trillion	Globe Hollow Treatment Plant	Charter Oak Wells	Parker Street	Progress Drive	New State Road	Love Lane	Distribution System Sites	DPH Action Level, EPA Health Advisory Level
PFOA	2	ND—2	7	4	11	ND	ND –11	70 combined parts per trillion
PFOS	2	2 - 3	5	3	21	ND	2 – 20	
PFNA	ND	ND	ND	ND	ND	ND	ND	
PFHxS	ND	ND	2	ND	4	3	ND – 4	
PFHpA	ND	ND	2	ND	3	ND	ND - 4	

Other Water Quality Information

Information about Radon: Radon is a colorless, tasteless, naturally occurring radioactive gas which may be present in rock, soil, groundwater and air. Radon normally escapes from the ground in small concentrations into the atmosphere, where it dissipates harmlessly. Elevated concentrations of radon, however, can exist if this gas is trapped, for example in our homes or businesses. Radon can enter the home through cracks and openings in foundations. Some radon can also enter homes through drinking water supplies during showering, cooking and other water activities.

Long-term exposure to high levels of radon in air may lead to the development of lung cancer. The EPA has set an Action Level of 4 picocuries per liter (pCi/L, a measure of radioactivity) for radon in air. Studies have shown that approximately 10,000 pCi/L of radon in water will normally produce a concentration of about 1 pCi/L in air. In most cases radon entering the home through tap water is a small source of all the radon in indoor air and therefore constitutes a low risk of exposure. The radon levels in Manchester groundwater have been found to be far below 10,000 pCi/L. If you are concerned about radon in your home, *test the air*. For more information contact the Connecticut Department of Health at (860) 509-7367 or the National Radon Hotline at 1-800-767-7236.

Information on *Cryptosporidium*: *Cryptosporidium* is a microscopic organism commonly found in the environment. *Cryptosporidium* can contaminate surface waters, including drinking water sources, via runoff from the watershed. Ingesting only a small amount of *Cryptosporidium* in contaminated water can cause Cryptosporidiosis, a gastrointestinal illness that typically lasts 10 to 14 days. The ozone system, installed as part of the water treatment plant upgrade in 2011, provides an additional barrier of protection against *Cryptosporidium*. The Manchester Water Department has completed a two year monitoring program for *Cryptosporidium*. Samples of untreated source water were collected monthly from October 2015 to September 2017 to comply with EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2). *Cryptosporidium* concentration was less than 0.075 oocysts/Liter indicating compliance with the treatment requirements of the LT2 rule.

Information about hardness: Hardness is due to dissolved minerals, primarily calcium and magnesium, naturally occurring in groundwater. The presence or absence of hardness is not associated with health risks. However, it can produce soap scum on tubs and showers, as well as white mineral deposits on dishes and glassware, and can adversely affect water heaters and boilers. Manchester's water ranges from moderately hard (Globe Hollow Treatment plant and Charter Oak and Progress Drive wells) to hard (Parker Street wells) to very hard (New State Road Wells). Classified according to USGS guidelines by a scale widely used in industry, where water exceeding 180 mg/L (10.5 grains per gallon) is defined as very hard. Areas served by the New State Road and Love Lane wells are in the 250 mg/L range (14.6 grains per gallon).

Spotlight on Lead

We are currently conducting a materials inventory of our entire system. In the event that we find or suspect or there may be lead pipes leading into your home we may contact you to participate in our targeted sampling program. This helps us to ensure that our water treatment is working as well as it can be.

Thank you for your cooperation.

Flushing the water for several minutes will provide you with fresh water from the water main, and will lessen the risk of any potential lead exposure. This is especially important if the water has not been used for several hours— such as overnight or if you have returned from being away. It is also a good practice to run the water after any service disruption. Always use cold water for cooking and drinking water as well as for formula preparation. The water department has been phasing out the use of lead pipes and actively replacing them where possible since the early 1930s.

Operations



Manchester Water and Sewer is pleased to offer convenient online payment services on our website at <https://manct.us/f>. Our online system provides customers access to view or pay bills using a credit card, debit card or bank account at no charge. Customers can register for an online account to access extended features like email and text alerts and automatic payment processing. If you need assistance with the online payment website, please contact Customer Service at (860) 647-3135.

Information about COVID-19 impact on operations:

The Manchester Water Department has maintained continuous operations throughout the pandemic and continues to provide safe drinking water to our service area. We have sought to maintain the health and safety of our field crew as well as that of the public at large and have adjusted operations as necessary. Thank you for your patience and flexibility in working with us as we have navigated changing conditions.