

CITY OF METHUEN

Searles Building – Rm 206
41 Pleasant Street
Methuen, MA 01844

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**Methuen Water Department
2015
Annual Water Quality Report**



Mayor Stephen N. Zanni

**2015 Annual Drinking Water Quality Report
For
Methuen Water Treatment Plant
Methuen, Massachusetts
MASSDEP PWSID # 3181000**

IMPORTANT INFORMATION: This report is a snapshot of drinking water quality that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are committed to providing you with information because informed customers are our best allies.

INFORMACION IMPORTANTE: El informe contiene informacion importante sobre la calidad del agua en su comunidad. Traduzcalo o hable con alguien que lo entienda bien.

INFORMATIONS IMPORTANTES: Le rapport contient des informations importantes concernant la qualite de l'eay de votre communaute. Faites-le traduire, ou parlez-en a un ami qui le comprend bien.

IMPORTANTI INFORMAZIONI: La relazione contiene importanti informazione sulla qualita del'acqua della Comunita. Tradurlo o parlarne con un amico che lo comprenda.

1. PUBLIC WATER SYSTEM INFORMATION

Address: 25 Burnham Road

Water Treatment Plant	978-983-8845	Tom Lannan
Water Distribution & Construction	978-983-8855	Daryl Laurenza
Billing Office	978-983-8555	
EPA Safe Drinking Water Hotline	800-426-4791	

Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by a Massachusetts certified operator who oversees the routine operations of our system. As part of our ongoing commitment to you, last year we made the following improvements to our system: Reservoir Street Storage Tank upgrade, continuation of the distribution system flushing program, and selected hydrant and valve replacement.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, opportunities exist at all city council meetings. The Methuen City Council meets every first and third Monday at 7:00 pm in the Great Hall, Searles Building, 41 Pleasant Street.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

Your water is provided by the following sources listed below:

Source Name	MassDEP Source ID#	Source Type	Location of Source
Merrimack River	3181000-01S	Surface water	Riverside Drive

Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We filter the water to remove small particles and organisms such as sediment, algae and bacteria.
- We add a disinfectant to protect you against microbial contaminants.
- We aerate and/or filter the water to remove volatile organic contaminants.

The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

How Are These Sources Protected?

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?

A susceptibility ranking of HIGH was assigned to this system using the information collected during the assessment by MassDEP.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Methuen Water Treatment Plant and online at <http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports> . For more information, call Michael Sheehan at the Methuen Water Treatment Plant at 978-983-8845.

What Are the Key Issues For Our Water Supply?

- Land Uses in the Protection Area
- Source Water Protection
- Emergency Planning
- Best Management Practices (BMP's)

What Can Be Done To Improve Protection?

Residents can help protect sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town meeting
- Taking hazardous household chemicals to hazardous materials collection days
- Encourage the creation of pet waste stations for waste disposal in parks.
- Limiting pesticide and fertilizer use, etc.

What is a Cross Connection and What Can I do about it?

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you're going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow prevention device can prevent this problem. The Methuen Water Department recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. For additional information on cross connections and on the status of your water system's cross connection program, please contact Tim Cronin, 978-983-8845.

3. SUBSTANCES FOUND IN TAP WATER

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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and 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 can also come from gas stations, urban stormwater 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, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. 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 by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 Methuen Water Department 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, 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>.

4. IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) – 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 (MCLG) –The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) 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 (chlorine, chloramines, chlorine dioxide) below which there is no known or expected risk to health.

MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

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

90th Percentile – Out of every 10 homes sampled, 9 were at or below this level.

ppm = parts per million, or milligrams per liter (mg/l)

ppb = parts per billion, or micrograms per liter (ug/l)

pCi/l = picocuries per liter (a measure of radioactivity)

NTU = Nephelometric Turbidity Units

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

Massachusetts Office of Research and Standards Guideline (ORSG) – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

5. EDUCATIONAL INFORMATION

Do I Need To Be Concerned About Certain Contaminants Detected In My Water?

Sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

6. WATER QUALITY TESTING RESULTS

What Does This Data Represent?

The water quality information presented in the table(s) is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table(s).

	Date(s) Collected	90 th percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	Sept 2015	0.00	15	0	30	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	Sept 2015	0.04	1.3	1.3	30	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

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 Methuen Water Department 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, 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>.

Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination	
Daily Compliance (NTU)	5	-----	0.160	N	Soil runoff	
Monthly Compliance*	At least 95%	100%	-----	N		
Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.						
*Monthly turbidity compliance is related to a specific treatment technique (TT). Our system filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations.						
	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	1.7	-----	>5%	0	N	Naturally present in the environment

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Radioactive Contaminants							
Gross Alpha (pCi/l) (minus uranium)	Feb 2013	0.27	0-0.27	15	0	N	Erosion of natural deposits
Gross Beta/photon emitters (mrem/yr)	Feb 2013	6.1	0-6.1	50	0	N	Decay of natural and man-made deposits
Radium 226 & 228 (pCi/L)(combined values)	Mar 2014	0.27	0-0.27	5	0	N	Erosion of natural deposits
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2015	26.2	6.8-39.6	80	-----	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2015	12.7	6.4-21.0	60	-----	N	Byproduct of drinking water disinfection
Chlorine (ppm) (free, total or combined)	Monthly in 2015	0.72	0.03-1.71	4	4	N	Water additive used to control microbes
Inorganic Contaminants							
Perchlorate	Sept 2015	0.22	0.0 – 0.22	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents

■ Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.

▲ The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm)	Mar 2015	55	----	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	Mar 2015	16	----	250	----	Natural sources
Other Organic Contaminants - When detected at treatment plant as VOC residuals, not TTHM compliance						
Bromodichloromethane (ppb)	Quarterly 2015	0.9-6.9	3.3	---	---	By-product of drinking water chlorination
Chloroform (ppb)	Quarterly 2015	1.5-7.7	4.5	---	---	By-product of drinking water chlorination
Dibromodichloromethane (ppb)	Quarterly 2015	0.0-3.4	1.3	---	---	By-product of drinking water chlorination
Bacteriological Contaminants						
Cryptosporidium (Organisms)	Monthly 2008 – 2010	0 - 2	0.17	----	----	Discharged especially where water is contaminated with sewage or animal wastes
Secondary Contaminants						
Aluminum (ppb)	Mar 2015	0.051	----	200	----	Byproduct of treatment process
Chloride (ppm)	Mar 2015	83	----	250	----	Runoff from road de-icing, use of inorganic fertilizers, landfill leachates, septic tank effluents, animal feeds, industrial effluents, irrigation drainage, and seawater intrusion in coastal areas
Odor (T.O.N.)	Mar 2015	<1.0	----	3 TON	----	Erosion of natural deposits; Leaching from wood preservatives ⁰
PH	Mar 2015	7.1	----	6.5-8.5	----	-----
Total Dissolved Solids (TDS) (ppm)	Mar 2015	190	----	500	----	Erosion of natural deposits.
Zinc (ppm)	Mar 2015	0.14	----	5	----	Erosion of natural deposits, leaching from plumbing materials
Unregulated Contaminant Monitoring Results (UCMR3)						
Parameter (units)	Average		Range of Detection		Possible Source	
Chlorate (ppb)	253		160-380		By-product of drinking water disinfection	
Chromium (ppb)	0.15		<0.03 – 0.14		Erosion of natural deposits	
Strontium (ppb)	48		30-59		Erosion of natural deposits	
Vanadium(ppb)	0.3		<0.2 – 0.5		Erosion of natural deposits	
1,4-Dioxane(ppb)	0.11		0.11		industrial uses and accidental spills	

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. 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 only. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. "Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to prevent infection. Cryptosporidium must be ingested for it to cause disease, and may be passed through other means than drinking water.

Unregulated contaminants are those that do not have a drinking water standard set by the United States Protection Agency (US EPA). The UCMR3 results listed in the table above are those contaminants which were found to be greater than the analytical laboratory detection limit. Every five years, public water suppliers are required per the provisions of the Safe Drinking Water Act (SDWA) to monitor for up to 30 contaminants. This is referred to as the “UCMR” monitoring program. The results provide US EPA with valid data on the occurrence of contaminants in drinking water and help determine whether or not standards should be set. During 2014 and 2015, the Methuen Water Treatment Plant monitored for 21 contaminants at the entry point to the distribution system. The list of contaminants to be monitored by the Methuen Water Treatment Plant was established by US EPA, and included metals, organic compounds and perfluorinated compounds. For additional information, please visit <http://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule>

7. COMPLIANCE WITH DRINKING WATER REGS

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.