*2020 C*onsumer Confidence Report

For

East Brookfield Water Department

East Brookfield , Massachusetts

MASSDEP PWSID # *208-4000*

This report is a snapshot of the 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 this information because informed customers are our best allies.

PUBLIC WATER SYSTEM INFORMATION

Address**: 424 East Main Street East Brookfield Ma 01515**

Contact Person: Jeffrey Beauchamp

Telephone #: 508-867-6575 email ebwater@eastbrookfieldma.us*}*

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:

Routine Hydrant flushing program

Received funding through the Drinking Water State Revolving Fund to begin replacing the existing water mains on route nine from Harrington street to Brookfield town line.

Purchased a new Water Dept service truck.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the following meetings or educational events: Water Quality and Capitol Improvement meetings at the townhall.

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
West St Well	2084000-01G	Groundwater	West St off Podunk Road

Is My Water Treated?

Sodium Hypochlorite (Disinfectant) is added to protect you from microbial contaminants.

Potassium Hydroxide (corrosion control) is added to elevate the PH making the water less corrosive.

Our water system makes every effort to provide you with safe and pure drinking water.

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.

Our water system makes every effort to provide you with safe and pure drinking water. The water quality of our system is constantly monitored by us and MassDEP to determine if any treatment may be required.
Prior water quality test results show that the water needs to be treated to continue to meet these goals. To improve the quality of the water, our system is working on the installation of treatment *to* reduce the levels of Iron and Maganese .

How Are These Sources Protected?
The East Brookfield Water Department owns,maintains and inspects the zone 1.
Zone 1 has the radius of 400' surrounding the public water supply wellhead.

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 East Brookfield Water Dept at 424 East Main Street] and online at https://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program . For more information, call Water Dept. at 508-867-6575.

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
- Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools
- Limiting pesticide and fertilizer use, etc.

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. East Brookfield 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.

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.

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.

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

Unregulated Contaminants
Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

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.

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

Running Annual Average (RAA) – The average of four consecutive quarter of data.

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

Level 1 Assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

[
ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (ug/l)
ppt = parts per trillion, or nanograms per liter
pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units
ND = Not Detected
N/A = Not Applicable
mrem/year = millimrems per year (a measure of radiation absorbed by the body)

WATER QUALITY TESTING RESULTS

What Does This Data Represent?
The water quality information presented in the table 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.

	Date(s) Collected	90TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	9/18/2020	.0056	15	0	**20**	**0**	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	9/18/2020	.174	1.3	1.3	**20**	**0**	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

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
Inorganic Contaminants							
				6	6		Discharge from fire retardants; ceramics; electronics; solder
				10	N/A		Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
				7	7		Decay of asbestos cement water mains; erosion of natural deposits
				2	2		Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
				4	4		Discharge from electrical, aerospace, and defense industries; erosion of natural deposits
				10	0		By-product of drinking water disinfection
				5	5		Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
				100	100		Discharge from pulp mills; erosion of natural deposits
				200	200		Discharge from metal factories; discharge from plastic and fertilizer factories
				4	4		Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
■ Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.							
				2	2		Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nitrate (ppm)	5/11/2020	.0533		10	10		Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
				1	1		Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate (ppb)	8/12/2019	ND		2	N/A		Rocket propellants, fireworks, munitions, flares, blasting agents
				50	50		Discharge from metal refineries; erosion of natural deposits; discharge from mines

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
				2	0.5		Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

				70	70		Runoff from herbicide used on row crops
				50	50		Residue of banned herbicide
				TT=5 %	0		Added to water during sewage/wastewater treatment
				2	0		Runoff from herbicide used on row crops
				3	3		Runoff from herbicide used on row crops
				200	0		Leaching from linings of water storage tanks and distribution lines
				40	40		Leaching of soil fumigant used on rice and alfalfa
				2	0		Residue of banned termiticide
				200	200		Runoff from herbicide used on rights of way
				400	400		Discharge from chemical factories
				6	0		Discharge from rubber and chemical factories
				200	0		Runoff/leaching from soil fumigant used on soybeans, cotton, and orchards
				7	7		Runoff from herbicide used on soybeans and vegetables
				20	20		Runoff from herbicide use
				30	0		Emissions from waste incineration and other combustion; Discharge from chemical factories
				100	100		Runoff from herbicide use
				2	2		Residue of banned insecticide
				TT=1 %	0		Discharge from industrial chemical factories; an impurity of some water treatment chemicals
				400	0		Residue of banned pesticide
				200	0		Breakdown of heptachlor
				1	0		Discharge from metal refineries and agricultural chemical factories
				50	50		Discharge from chemical factories

				200	200		Runoff/leaching from insecticide used on cattle, lumber, gardens
				40	40		Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
)				200	200		Runoff/leaching from insecticide used on apples, potatoes and tomatoes
				500	0		Runoff from landfills; discharge of waste chemicals; residue of banned use in electrical transformers
				1	0		Discharge from wood preserving factories
				500	500		Runoff from herbicide use
				4	4		Runoff from herbicide use
				3	0		Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Contaminants							
Benzene (ppb)				5	0		Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (ppb)				5	0		Discharge from chemical plants and other industrial activities
				100	100		Discharge from and agricultural chemical factories
				600	600		Discharge from industrial chemical factories
				5	5		Discharge from industrial chemical factories
				5	0		Discharge from industrial chemical factories
				7	7		Discharge from industrial chemical factories
				70	70		Breakdown product of trichloroethylene and tetrachloroethylene
				100	100		Discharge from industrial chemical factories
				5	0		Discharge from pharmaceutical and chemical factories
				5	0		Discharge from industrial chemical factories
				700	700		Leaks and spills from gasoline and petroleum storage tanks
				100	100		Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (PCE) (ppb)	5/6/2019	<0.50		5	0		Discharge from factories and dry cleaners; residual of vinyl-lined water mains
				70	70		Discharge from textile-finishing factories
				200	200		Discharge from use in septic system cleaners
				5	3		Discharge from industrial chemical factories

				5	0		Discharge from metal degreasing sites and other factories
				1	1		Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories
				2	0		Leaching from PVC piping; discharge from plastics factories
				10	10		Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories; discharge from chemical factories
Radioactive Contaminants							
Gross Alpha (pCi/l) (minus uranium)	4/18/2015	0.99		15	0		Erosion of natural deposits
				50	0		Decay of natural and man-made deposits
▲The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.							
Radium 226 & 228 (pCi/L) (combined values)	4/8/2015	*0.45*		5	0		Erosion of natural deposits
				30	0		Erosion of natural deposits
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	9/25/2019	4.3	2.3 -4.3	80	N/A		Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	9/25/2019	ND	NA	60	N/A		Byproduct of drinking water disinfection
Chlorine (ppm) (free, total or combined)	Daily	.12	.01 - .1.05	4	4		Water additive used to control microbes
	Monthly in (year)	Highest quarterly running annual average	Range	10	0		Byproduct of drinking water disinfection
	Monthly in (year)	Highest Monthly 3-Sample Set Average	Range	1	0.8		Byproduct of drinking water disinfection
	Monthly in (year)	Highest individual sample result	Range	800	800		Water additive used to control microbes
	Monthly in (year)	Highest individual sample result		4	4		Water additive used to control microbes

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 Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
					6.3	Discharge from industrial production and use, in automobile exhaust, from landfills and natural sources
					3	Run-off from use as a pesticide
					2	Degraded from aldicarb by plants
					4	Degraded from aldicarb by plants
					N/A	Run-off from insecticide use
					N/A	N/A
					N/A	Discharge from use in chemical manufacturing
					10	Run-off from use as a fumigant
					N/A	Trihalomethane; by-product of drinking water chlorination
					90	Used as a fire-extinguishing fluid, an explosive suppressant, and as a solvent in the manufacturing of pesticides
					N/A	Trihalomethane; by- product of drinking water chlorination
					N/A	Run-off from use as a herbicide
					10 to 1,000	Used in rubber manufacturing and occurs as a gas
					N/A	Run-off from industrial use
					N/A	Run-off from use as an insecticide
					210	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide
					N/A	Occurs as a gas, and used as a refrigerant, a low-temperature solvent, and in fluorocarbon resins
					N/A	Discharge from industrial uses
				N/A	70	By-product of drinking water chlorination (In non-chlorinated sources it may be naturally occurring)
					2,690 to 269,000	Discharge from industrial uses
					N/A	Discharge from industrial use
					N/A	Discharge from steel and pulp mills; Erosion of natural deposits
					70 ppb	Naturally-occurring element found in the earth's crust and at low concentrations in seawater, and in some surface and ground water; cobaltous chloride was formerly used in medicine and as a germicide
				N/A	N/A	Trihalomethane; By-product of drinking water chlorination
					N/A	Run-off from use as a herbicide
					N/A	Discharge from use in chemical manufacturing

Unregulated Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
					1.4	Discharge from use as a refrigerant
					70	Discharge from use as a degreasing agent
					N/A	Discharge from use in chemical manufacturing
					N/A	Discharge from use in chemical manufacturing
					N/A	Discharge from use in chemical manufacturing
					400	Run-off from use as a nematocide
					N/A	Run-off from pesticide application
					0.3	Discharge from chemical manufacturing and landfills
					N/A	N/A
					350	N/A
					900 to 90,000	Estrogenic hormone naturally produced in the human body; and used in pharmaceuticals
					350	Estrogenic hormone naturally produced in the human body; and used in veterinary and human pharmaceuticals
					350	Estrogenic hormone naturally produced in the human body; and used in veterinary and human pharmaceuticals
					14	Run-off from use as a deicing chemical; discharge from antifreeze and industrial solvents
					350	Synthetic steroid; prepared from estrone
					N/A	Discharge from use as an industrial solvent
					N/A	Breakdown product from the use of the pesticide carboxyfuran
					N/A	Discharge from chemical manufacturing
					N/A	Discharge from chemical manufacturing
					300	Erosion of natural deposits
* US EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000 ppb for acute exposure.						
					350	Discharge from use as a production solvent and degreaser
					4	Discharge from use as a production and extraction solvent
				20-40	70	Fuel additive; leaks and spills from gasoline storage tanks
*EPA has established a lifetime Health Advisory (HA) of 0.3 mg/L and an acute HA at 1.0 mg/L						
					N/A	Runoff from use as an insecticide
					100	Run-off from use as a herbicide
					N/A	Run-off from use as a herbicide
					40	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent

Unregulated Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
					140	Discharge from use in mothballs and other domestic products
				N/A	100	Discharge from domestic wastewater, landfills, and mining and smelting operations
					10	Discharge from industrial use; as a by-product of drinking water treatment; produced from naturally occurring precursor chemicals
					N/A	N/A
					70	Surfactant or emulsifier; used in fire-fighting foam, circuit board etching acids, alkaline cleaners, floor polish, and as a pesticide active ingredient for insect bait traps; U.S. manufacture of PFOS phased out in 2002; however, PFOS still generated incidentally
						Perfluorinated aliphatic carboxylic acid; used for its emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire-fighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives and photographic films
*PFOS and PFOA totals are combined						
					N/A	Manmade chemical; used in products to make them stain, grease, heat and water resistant
					N/A	Manmade chemical; used in products to make them stain, grease, heat and water resistant
					N/A	Manmade chemical; used in products to make them stain, grease, heat and water resistant
					N/A	Manmade chemical; used in products to make them stain, grease, heat and water resistant
					200 ppb 300 ppb 700 ppb 700 ppb 14 ppm 200 ppb 200 ppb	Discharge from the production, distribution, storage, and use of petroleum in transportation and industrial applications
					N/A	Run-off from use as a herbicide
					N/A	Discharge from chemical manufacturing
				N/A	10,000	Natural sources
				N/A	20	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water-softening agents
					1500	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
				250	N/A	Natural sources
					90	Discharge from use as an octane enhancer and oxygenate in gasoline
					120	Degraded from MTBE; discharged from use as an octane enhancer and

Unregulated Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
						oxygenate in gasoline
					N/A	Androgenic steroid naturally produced in the human body; and used in pharmaceuticals
					N/A	Discharge from use in chemical manufacturing
					N/A	Discharge from use in dry cleaning
					1.3	Discharge from use as an adhesive for joining pipes in water treatment systems and as a production solvent
					N/A	Discharge from use in chemical manufacturing
					210	Discharge from use as a cleaning agent, production solvent, and blowing agent

Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Iron (ppb)	**2/3/20**	**.761**		300	N/A	Naturally occurring, corrosion of cast iron pipes
Manganese* (ppb)	**2/3/2020**	**.489**		50	Health Advisory of 300	Natural sources as well as discharges from industrial uses
* EPA has established a lifetime Health Advisory (HA) for manganese of 0.3 mg/L and an acute HA at 1.0 mg/L (Add health language listed below if detect is over 300 ppb)						
				3	N/A	Erosion of natural deposits; Leaching from wood preservatives0
pH	**Daily**		**7.5**	6.5-8.5	N/A	Runoff and leaching from natural deposits; seawater influence

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (microgram per liter), or 50 parts per billion. In addition, MassDEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. ***Drinking water may***

naturally have manganese and, when concentrations are greater than 50 ug/L, the water maybe discolored and taste bad. Over a lifetime, the EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about the possible neurological effects. Children up to one year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days. *The ORSG differs from the EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity. See EPA Drinking Water Health Advisory for manganese at: https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards (ORSG) for manganese http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#11*

6. COMPLIANCE WITH DRINKING WATER REGS

Does My Drinking Water Meet Current Health Standard

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.

Health Effects Statements

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (microgram per liter), or 50 parts per billion. In addition, MassDEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese.

Drinking water may naturally have manganese and, when concentrations are greater than 50 ug/L, the water maybe discolored and taste bad. Over a lifetime, the EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about the possible neurological effects. Children up to one year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days.

The ORSG differs from the EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity.

See EPA Drinking Water Health Advisory for manganese at: https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards (ORSG) for manganese http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#11

7. EDUCATIONAL INFORMATON

Do I Need To Be Concerned about Certain Contaminants Detected in My Water?

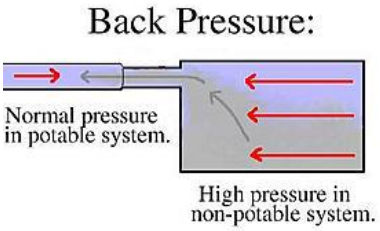
Manganese is a naturally occurring mineral found in rocks, soil and groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion, and health advisory levels. In addition, EPA and MassDEP have also established public health advisory levels. **Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days.** See: http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf.

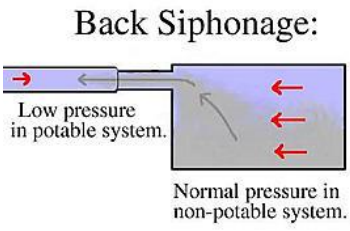
Cross-Connection Control and Backflow Prevention

The East Brookfield Water Department makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via deep wells from underground aquifers or withdrawal point from a surface water source, throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

What is a cross-connection?
A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allows the drinking water to come in contact with non-potable liquids, solids, or gases (hazardous to humans) in event of a backflow.

What is a backflow?
Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand causing the water to flow backward inside the water distribution system (back siphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.





What can I do to help prevent a cross-connection?
Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

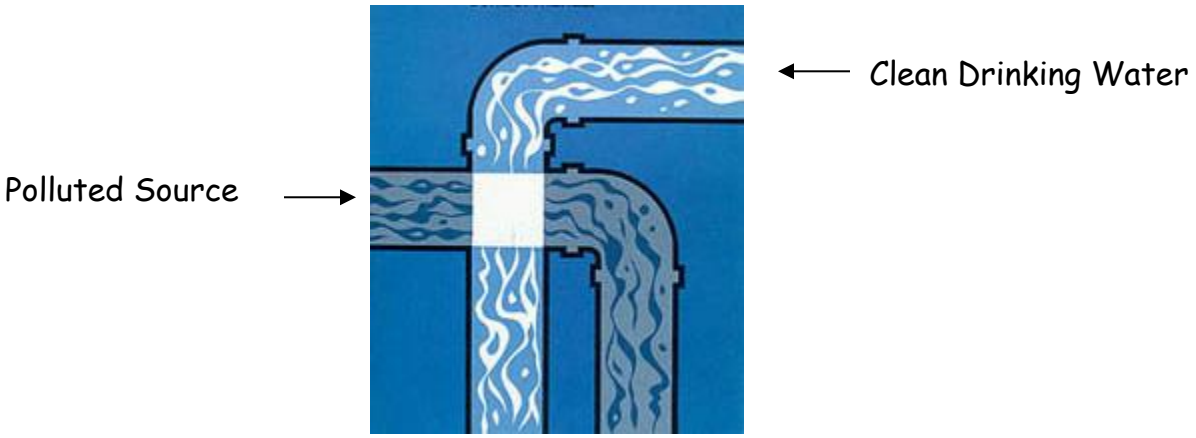
- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.

- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

If you are the owner or manager of a property that is being used as a commercial, industrial, or institutional facility you must have your property's plumbing system surveyed for cross-connection by your water purveyor. If your property has NOT been surveyed for cross-connection, contact your water department to schedule a cross-connection survey.

Example 2:

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 at the same time you turn on the hose, the fertilizer may be sucked back into the drinking water pipes through the hose. This problem can be prevented by using an attachment on your hose called a backflow-prevention device.

The East Brookfield 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 systems cross connection program, please contact _Jeffrey Beauchamp at 508-867-6575.

8. ADDITIONAL INFORMATIOn