Peabody Water System and Water Quality

Peabody's Water System: Peabody's drinking water is mainly supplied by the Coolidge and Winona Water Treatment Plants (WTP). MWRA provides supplemental drinking water during high water demand months. There are five water storage tanks in the distribution system that provide water storage, water pressure, and fire protection for the City.

Source of Water: At Winona WTP, water is pumped from Winona Pond for treatment. At Coolidge WTP, water is pumped from Suntaug Lake and Spring Pond for treatment. The source of water for Suntaug Lake and Winona Pond is the Ipswich River. Under MADEP's Water Management Act, withdrawing water from the Ipswich River is only allowed during winter and spring months. The DEP has characterized our surface water source susceptibility as moderate to high. Please visit http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3229000.pdf for more information.

Water Treatment: Coolidge and Winona Water Treatment Plants implement the following treatment steps: *coagulation and sedimentation* which remove particles from the water through flocculation and then settling, *filtration* which removes the remainder of the particles out of the water, *primary disinfection* which uses free chlorine to kill the harmful microbes, and *secondary disinfection* which uses monochloramine to control the biological activity in the distribution system. Additionally at Coolidge WTP, free chlorine is used for pretreatment to oxidize the iron and manganese in the source water during the fall and winter months.

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THE CITY OF PEABODY
2013 WATER QUALITY REPORT

To Our Customers:

The Peabody Department of Public Services is committed to providing safe and high quality drinking water to our customers. To ensure delivery of a quality product, we have made significant investments in treatment facilities, water quality monitoring, and our distribution system. We are pleased to present you with the 2013 Water Quality Report.

The EPA Stage 2 DBP Rule, which went into effect in 2012, requires water systems to meet "locational" running annual averages (LRAA) for Total Trihalomethanes (TTHM) at each of 8 sampling locations. In the past, the City had to report a combined running annual average (RAA) of all samples collected throughout the distribution system and was able to meet EPA requirements. During 2013, our water system exceeded the maximum contaminant level of TTHM in Quarters 1, 2 and 3. The City has implemented a number of short-term and long-term solutions to meet this new rule. One of the substantial work projects was the construction of the chloramination system to reduce the TTHM. The Chloramination system has been online since January 6, 2014. The levels of TTHM have decreased since we implemented our improvement work and the City is currently meeting the requirement of the EPA Stage 2 DBPR .

Please call Michael Sheu, Water Superintendent, at 978-536-5069 with any questions, comments, or concerns.

Public Service: (978) 536-0600
Water Distribution: (978) 536-7121
Website: www.peabody-ma.gov/public_services.html

Winona Water Treatment Plant: (978) 536-5069
Coolidge Water Treatment Plant: (978) 538-7573

What does this table tell me?

The following contaminants were detected in the Peabody's drinking water system. All are below allowed levels except Total Trihalomethanes. The table also shows the amount (Average Level Detected) of each substance found in the water compared to the level allowed by law. We have also included information on substances found in MWRA drinking water, which made up about 20% of the water delivered to your homes in 2013.

Samples collected from the Coolidge WTP

Contaminant	Date Collected	Average Level Detected	Range of Detects	MCL	MCLG	Violation	Possible Sources
Barium (ppm)	2/4/2013	0.016	-	2	2	No	Discharge of drilling wastes or from metal refineries; Erosion of natural deposits
Fluoride (ppm)	Daily	0.50	0.00-1.20	4	4	No	Water additive, promotes strong teeth
Nitrate (ppm)	2/4/2013	0.25	-	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage
Perchlorate (ppb)	9/21/2013	0.10	-	2	n/a	No	Rocket propellants, fireworks, munitions, flares, blasting agents
Sodium (ppm)	2/4/2013	45.20	-	n/a	n/a	No	Naturally presents in the environment
Sulfate (ppm)	12/31/2013	15.00	-	n/a	n/a	No	Naturally presents in the environment
Radium 226 (pCi/L)	9/12/2011	0.03	-	5	0	No	Erosion of natural deposits
Turbidity	Every 4 hours	0.15	0.08-0.27	TT=5 NTU	n/a	No	Soil runoff
		100% of samples < 0.30 NTU					

Samples collected from the Winona WTP

Contaminant	Date Collected	Average Level Detected	Range of Detects	MCL	MCLG	Violation	Possible Sources
Barium (ppm)	2/4/2013	0.013	-	2	2	No	Discharge of drilling wastes or from metal refineries; Erosion of natural deposits
Fluoride (ppm)	Daily	0.86	0.60-1.10	4	4	No	Water additive, promotes strong teeth
Nitrate (ppm)	2/4/2013	0.10	0.1	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage
Sodium (ppm)	2/4/2013	51.50	-	n/a	n/a	No	Naturally presents in the environment
Sulfate (ppm)	12/31/2013	32.00	-	n/a	n/a	No	Naturally presents in the environment
Radium 226 (pCi/L)	9/12/2011	0.06	-	5	0	No	Erosion of natural deposits
Turbidity (NTU)	Every 4 hours	0.09	0.05-0.27	TT=5 NTU	n/a	No	Soil runoff
		100% of samples < 0.30 NTU					

Samples collected from the Distribution Sites

Contaminant	Date Collected	Average Level Detected	Range of Detects	MCL	MCLG	Violation	Possible Sources
Total Coliform (% of samples)	Weekly	1.6% (July)	ND-1.6%	5% of monthly samples	0	No	Naturally present in the environment and animal waste
Free Chlorine (ppm)	Weekly	0.57	0.01-2.20	4	4	No	Water additive to control microbes
Haloacetic Acids (HAA5, ppb)	Quarterly	31.8	4.0-85.6	60	n/a	No	By-product of Chlorination
Total Trihalomethanes (TTHM, ppb)	Quarterly	61.2	6.5-138.2	80	n/a	Yes*	By-product of Chlorination

Contaminant	Date collected	90th Percentile	Range of Detects	Action Level (AL)	# of Site samples	Violation	Possible Sources
Lead (ppb)	6/1/2012	0.003	ND-0.004	0.015	30	No	Corrosion of household plumbing system
Copper (ppm)	6/1/2012	0.043	ND-0.110	1.3	30	No	Corrosion of household plumbing system

*Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Please visit www.state.ma.us/04water/html/wat.htm for MWRA Water Quality Reports

Contaminant	Date Collected	Average Level Detected	Range of Detects	MCL	MCLG	Violation	Possible Sources
Barium (ppm)	Quarterly	0.008	0.007-0.009	2	2	No	Discharge of drilling wastes or from metal refineries; Erosion of natural deposits
Fluoride (ppm)	Daily	1.01	0.37-1.1	4	4	No	Water additive, promotes strong teeth
Nitrate (ppm)	Monthly	0.08	0.01-0.08	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage
Nitrite (ppm)	Monthly	0.005	ND-0.005	1	1	No	Runoff from fertilizer use; leaching from septic tanks, sewage
Mono-Chloramine (ppm)	Daily	1.80	0.01-4.0	4	4	No	Rocket propellants, fireworks, munitions, flares, blasting agents
Sodium (ppm)	Annually	35.90	-	n/a	n/a	No	Naturally presents in the environment
Haloacetic Acids (HAA5, ppb)	Quarterly	9	1.4-13.2	60	n/a	No	By-product of Chlorination
Total Trihalomethanes (TTHM, ppb)	Quarterly	10.1	3.0-13.9	80	n/a	No	By-product of Chlorination
Total Coliform (% of samples)	Weekly	0.5% (Nov)	ND-0.5%	5% of monthly samples	0	No	Naturally present in the environment and animal waste

Abbreviations and Definitions

•Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water.
•Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health.
•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 for which, if exceeded, triggers a treatment or other requirement which a water system must follow.
•90th Percentile: Out of every 10 homes, 9 were at or below this level.
•PPB - parts per billion or micrograms per liter (ug/L), both units are interchangeable.
•PPM - parts per million or milligrams per liter (mg/L), both units are interchangeable.
•pCi/L: picocuries per liter
•NTU: Nephelometric Turbidity Units

Drinking Water and People with Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Contamination in Bottle Water and 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, may even include radioactive material. Raw water may also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in untreated source water, also called raw water, include •*Microbial 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production and transportation, mining, or farming; •*Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; •*Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban Storm water runoff, and septic systems; •*Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which may provide protection to public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants found in the environment. 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 Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Important Lead Information from EPA

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 Peabody Water Treatment Plants are 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.

Conservation Tips

•Check household faucets for leaks. A faucet with even a slow drip uses 10 to 25 gallons of water.
•Keep showers to 5 minutes or less in length. A five-minute shower uses 10 to 25 gallons of water.
•Use a broom to sweep your driveway, garage, or sidewalk instead of using water.
•Use a bucket of water to wash your bike or the family car and rinse quickly with a hose.
•Water your lawn in the evening or in the early morning to avoid evaporation. Be careful to water only the lawn and not the sidewalk or street.
•Use water only when you need it. Don't leave water running; be sure to turn it off when you are finished.

Cross Connection Control

What is a Cross-Connection?

A cross-connection is a director potential connection between any part of the public water supply and a source of contamination or pollution. All homes have potential cross connections. The most common form of a cross-connection is a garden hose, connected to the public water supply system and then used to apply chemicals and fertilizers. Other common cross-connections are dishwashers, toilets, pools, lawn sprinklers, and boilers.

Where Can a Cross Connection Occur?

A cross-connection can occur at one of many points throughout a water distribution system when there is unintended backflow from a contaminated source into the water distribution lines. Two types of backflow are backpressure and backsiphonage. Backpressure may be created when a source of pressure such as a pump creates a pressure greater than that supplied by the water distribution pipe. Backsiphonage may occur when there is a drop in the supply pressure of the water distribution system caused by water line break, water main repair, or rapid withdrawal of water from a fire hydrant. In these instances, a vacuum is created which may pull or siphon contaminants or pollutants back into the drinking water supply.

Why is it Important to Prevent Cross-Connections and Backflow?

A cross-connection or backflow can be a serious health hazard as a result of chemical or bacterial contamination of the drinking water system. Backflow prevention devices must be installed and must be maintained to eliminate backflow of contamination into our drinking water supply.

Types of Cross-Connections and Suggested Devices to Eliminate Them

Garden Hoses Install an atmospheric vacuum breaker which screws onto the faucet and provides a second threaded connection for the hose. One can be purchased at your local hardware store. Use one with ASSE 1011 designation or at least UL approval.
Private Wells Private Wells are prohibited from connection to the public water supply.
Lawn Irrigation Systems Ensure an approved backflow assembly is installed on underground or automatic systems; and/or if your system uses a pump or has fertilizer/chemical injection

Water Quality Q&A

My water is discolored sometimes. Can I drink it?

You can safety drink, cook with, and bathe in this water. Old iron pipes can cause a red, brown, or yellow color in water. A red or brown color is caused by very small specks of iron. These specks of iron can enter the water if there is quick change in water speed or direction in your local pipes. Such changes can result from main breaks, valve repair, flushing the system, or the testing or use of fire hydrants. Running the water for 15 to 20 minutes should clear this up. Wait until the water clears before doing laundry to avoid staining. You should also flush your hot water heater every year to remove accumulated sediment.

My water has a "funny" taste or odor sometimes. Can I drink it?

You can safely drink, cook with, and bathe in this water. Sometimes algae can cause a "fishy" or "grassy" odor. Algae are normal, harmless plants that appear in our reservoirs at certain times of the year. On occasion, customers may also taste or smell the low levels of chlorine compounds added to disinfect the water. Fill a jug with tap water and put it in the refrigerator to get rid of the taste and odor.

SPANISH
El informe contiene informacion importante sobre la calidad del agua en su communidad. Tranduzcalo o hable con alguien que lo entienda bien.

PORTUGUESE
O relatorio contem informacoes importantes sobre a qualidade da auga da comunidade. Traduza-o ou peca ajuda de uma pessoa amiga para ajuda-lo a entender melhor.