2019 Annual Drinking Water Quality Report

Fort Drum Public Works
Fort Drum, New York 13602
Public Water Supply ID #2212214

April 2020

OVERVIEW

Fort Drum is proud to provide you this copy of its 2019 Annual Drinking Water Quality Report. We publish this report annually to comply with state and federal regulations and to provide our consumers with detailed information on the water they drink.

In summary, Fort Drum monitors its water for contaminants throughout the year. In 2019, **our water system met all water quality standards.** Included are details about where our water comes from, what it contains, and how it compares to state and federal standards.

We want you to be informed about your drinking water. If you have any questions about this report or concerning your drinking water please contact Thomas P. Hudon, chief water plant operator, at (315) 774-0249, or Chris Whitman, Drinking Water and Wastewater Program Manager, at (315) 523-4507.

HOW DO I KNOW MY WATER IS SAFE?

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and in some cases radioactive material, and it can pick up substances resulting from the presence of animals or from human activities. In order to ensure that tap water is safe to drink, the state and the Environmental Protection Agency prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Similarly, the New York State Department of Health and the Food and Drug Administration have established limits for contaminants in bottled water, providing for equal protection of public health.

Fort Drum routinely tests for contaminants that may be present in source water to include: microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants, and radioactive contaminants.

Kayakers on the Black River in Brownville, New York.

FORT DRUM'S WATER SUPPLY

Our Fort Drum drinking water system serves approximately 40,000 people. This population constantly fluctuates due to frequent military reassignments. This figure includes both Fort Drum residents and employees living in nearby communities.

Fort Drum obtains its water from two sources: groundwater wells located near the airfield and from the City of Watertown, which draws water from the Black River.

Fort Drum's water plant pumped and treated 265 million gallons in 2019. Our daily peak production was 1.6 million gallons. Fort Drum also purchased 256 million gallons of water from the city. Water-town's total plant output for 2019 was 1.99 billion gallons. The daily average was 5.5 million gallons. The highest single day was 7.7 million gallons.

Under a purchase agreement, Fort Drum receives approximately 800,000 gallons per day from the Development Authority of the North Country (DANC). DANC purchases water from the City of Watertown and delivers it to Fort Drum through its pumping and piping systems.

The City of Watertown's water source is the Black River, a surface water source, which originates in the Adirondack Mountains and runs through the center of the city and westerly to Black River Bay. During 2019, the system did not experience any water source restrictions. Flows of the Black River are regulated by the Hudson Black River Regulating District and are controlled by a series of hydroelectric power dams stretching from its headwaters in the Adirondacks to its mouth in Lake Ontario.

The City of Watertown's 15 million gallon per day water treatment plant utilizes 2.3% of the minimum flow of the Black River. The water is treated within modern facilities prior to distribution. Liquid alum and a nonionic polymer are added to the water to coagulate and settle out dirt and organic matter through a dosing station upstream of the water plant. The settled water is then pumped to the processing complex at 1707 Huntington Street. Polyaluminum chloride and nonionic or cationic polymer are added prior to filtering. Carbon may be added to combat taste and odor.

The filtered water is disinfected with chlorine to kill bacteria, viruses, and other microorganisms. The water is then treated with sodium silicate for corrosion control and with fluoride to help fight tooth decay. The finished product, high-quality potable water, is pumped to the city's distribution system and through the DANC line to Fort Drum.

Fort Drum's groundwater source historically consisted of 12 drilled groundwater wells located to the east of the cantonment area. All wells were shut down in 2006 as a precautionary measure following discovery of a JP-8 fuel release at the Wheeler-Sack Army Airfield. Six groundwater wells were returned to service in December 2008 after assessment and concurrence from the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation

(NYSDEC). Four of the six wells were voluntarily taken out of service in 2010. The remaining two wells were shut down in March 2016 as a precautionary measure following detection of very low levels of per- and polyfluorinated alkyl substances (PFAS).

In August 2016, five new groundwater wells were approved for operation by DOH and DEC with a maximum water withdrawal of 2.2 million gallons per day. Raw groundwater is treated at the Fort Drum Water Treatment Plant with ultraviolet (UV) light and then chlorine to kill bacteria and viruses. Fluoride is added to help fight tooth decay. Then the treated drinking water is pumped into the distribution system where it mixes with purchased drinking water from the City of Watertown.

In January 2017, New York State Department of Health tested our drinking water for PFAS as part of the New York State Water Quality Rapid Response Team; all results were at less than detectable levels. Fort Drum continued voluntary sampling in 2019; results are included in Table 3.

SOURCE WATER ASSESSMENT

The NYSDOH evaluated the City of Watertown's PWS's (Public Water Supply's) susceptibility to contamination under the Source Water Assessment Program (SWAP).

The City of Watertown’s water supply is most susceptible to sediment, turbidity, bacteria, Cryptosporidium oocysts, Giardia cysts and permitted discharges within the watershed.

Fort Drum’s groundwater supply wells are most susceptible to inorganic contaminants from runway deicing and volatile organics from fuel spills.

Both the City of Watertown and Fort Drum provide regular monitoring and treatment to ensure drinking water meets all applicable standards.

ARE THERE CONTAMINANTS IN FORT DRUM'S DRINKING WATER?

Fort Drum and the City of Watertown routinely monitor and test your drinking water for contaminants. These contaminants include: coliform, turbidity, inorganic compounds, nitrate, lead, copper, organic compounds, total trihalomethanes, haloacetic acids, giardia, cryptosporidium, gross alpha, radium 226 and 228, synthetic organic compounds and EPA unregulated contaminant monitoring rule (UCMR) sampling. Pages 8 through 12 show results for contaminants that were detected in Fort Drum's drinking water.

Table 1: Shows the contaminants that Fort Drum detected in its water supply as compared to the Maximum Contaminant Level (MCL).

Table 2: Shows Fort Drum's detections of unregulated contaminants, some of which presently have no MCLs. The Environmental Protection Agency has asked water suppliers to monitor these substances to determine if additional regulation of them is needed.

Table 3: Shows Fort Drum's voluntary PFAS sampling as a precautionary measure.

Table 4: Shows contaminants detected by the City of Water - town, to include substances with and without MCLs.

New York State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently; therefore, some of the data may be more than one year old.

Please note that all drinking water, including bottled drinking 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) or the NYSDOH District Office at (315) 785-2277.

DEFINITIONS:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible.

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 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 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 contamination.

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

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

Nanograms per liter (ng/L): Corresponds to one part of liquid in one trillion parts of liquid (parts per trillion - ppt).

Not Applicable (NA): Limits do not apply.

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTUs is just noticeable to the average person.

Milligrams per liter (mg/L): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/L): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Million Fibers per Liter (MFL): A measure of the presence of asbestos fibers that are longer than 10 micrometers.

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

Table 1: Fort Drum Table of Detected Contaminants							
Contaminant	**Violation Yes/No**	**Sample Date: Month Year**	**Level Detected: Average (Range)**	**Regulatory Limit (MCL,TT,AL)**	**MCLG**	**Unit of Measure**	**Likely Source of Contamination**
Total Coliform	No	2019	None Detected	TT =>5% of all samples positive	0	Not Applicable	Naturally present in the environment
Turbidity	No	2019	0.07 (0.05-0.12)	TT=<5NTUs	NA	NTU	Particles from water mains
Fluoride	No	2019	0.74 (0.57-0.95)	MCL=2.2	4	mg/L (ppm)	Added to prevent tooth decay
Copper[1]	No	2018	0.051 (0.014 - 0.063)	AL= 1.3	1.3	mg/L (ppm)	Corrosion of household plumbing
Lead[1]	No	2018	<1.0	AL=15	0	ug/L (ppb)	Naturally occurring
Nitrate	No	2/5/8/11 2019	0.52 (ND – 1.12)	MCL=10	10	mg/L (ppm)	Natural deposits or fertilizer
Antimony	No	7 2019	0.52 (ND-1.1)	MCL=6	6	ug/L (ppb)	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	No	7 2019	0.52 (0.3-1)	MCL=10	0	ug/L (ppb)	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	No	7 2019	0.12 (0.115-0.132)	MCL=2	2	mg/L (ppm)	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	No	7 2019	0.35 (0.2-0.4)	MCL=100	100	ug/L (ppb)	Discharge from steel and pulp mills; erosion of natural deposits
Nickel	No	7 2019	0.57 (ND-1.0)	NA	NA	ug/L (ppb)	Oil or coal combustion, nickel metal refining and naturally occurring
Chloromethane	No	2019	0.31	MCL=5	5	ug/L (ppb)	Production of silicone, used as a refrigerant, naturally occurring
Total Trihalomethanes[2]	No	2/5/8/11 2019	70.1 (4.8 -129.4)	MCL=80	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Haloacetic Acid[2]	No	2/5/8/11 2019	40.5 (1.5 – 48.7)	MCL=60	NA	ug/L (ppb)	Byproducts of drinking water chlorination

1. *The level presented represents the 90th percentile of the 30 sites tested. All 30 samples were less than the action level. One-half of our drinking water comes from the City of Watertown. 90th Percentile Value: The values reported for lead and copper represent the 90th percentile. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead and copper values detected at your water system*

2. *This level represents the highest locational running annual average of all sites sampled and the range of all samples collected.*

Table 2: Fort Drum Table of Detected Contaminants: Unregulated Contaminants Monitoring Program Rule Four[3]						
Contaminant	**Violation Yes/No**	**Sample Date: Month Year**	**Level Detected: Average (Range)**	**Regulatory Limit (MCL,TT,AL)**	**Unit of Measure**	**Likely Source of Contamination**
Manganese	No	10 2019	6.3 (0.61-12)	300	ug/L (ppb)	Naturally occurring
Bromochloroacetic Acid	No	10 2019	1.28 (0.87-1.5)	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Bromodichloroacetic Acid	No	10 2019	1.21 (0.91-1.54)	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Chlorodibromoacetic Acid	No	10 2019	0.51 (0.47-0.56)	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Dibromoacetic Acid	No	10 2019	0.44 (0.42-0.47)	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Dichloroacetic Acid	No	10 2019	11.97 (1.78-16.2)	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Trichloroacetic Acid	No	10 2019	12.39 (1.24-17)	NA	ug/L (ppb)	Byproducts of drinking water chlorination

3. All detectable unregulated contaminant results are listed. Most unregulated contaminants do not have an MCL and are being monitored to determine future regulations.

Table 3: Fort Drum Table of Voluntary Sampling of Per-and Polyfluoroalkyl Substances (PFAS)[4]						
Contaminant	**Violation Yes/No**	**Sample Date: Month Year**	**Level Detected: Average (Range)**	**Regulatory Limit (MCL,TT,AL)**	**Unit of Measure**	**Likely Source of Contamination**
Perfluorobutanesulfonic Acid (PFBS)	No	2/5/8/11 2019	1.1 (ND- 4.1)	NA	ng/L (ppt)	Manmade compound
Perfluorobutanoic acid (PFBA)	No	5/8/11 2019	5.7 (ND-12.7)	NA	ng/L (ppt)	Manmade compound
Perfluoropentanoic acid (PFPeA)	No	5/8/11 2019	19.7 (0.5-51.5)	NA	ng/L (ppt)	Manmade compound
Perfluoroheptanoic Acid (PFHpA)	No	2/5/8/11 2019	2.7 (ND-9.2)	NA	ng/L (ppt)	Manmade compound
Perfluorohexane Sulfonic Acid (PFHxS)	No	2/5/8/11 2019	3.3 (ND-12)	NA	ng/L (ppt)	Manmade compound
Perfluorohexanoic Acid (PFHxA)	No	2/5/8/11 2019	13.3 (ND-52)	NA	ng/L (ppt)	Manmade compound
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	No	5/8/11 2019	18.5 (ND-73.3)	NA	ng/L (ppt)	Manmade compound
Perfluorononanoic acid (PFNA)	No	2/5/8/11 2019	.18 (ND-.8)	NA	ng/L (ppt)	Manmade compound
Perfluoroundecanoic acid (PFUnA)	No	2/5/8/11 2019	.15 (ND-0.5)	NA	ng/L (ppt)	Manmade compound
Perfluorooctanesulfonic Acid (PFOS)	No	2/5/8/11 2019	.53 (ND-1.9)	NA	ng/L(ppt)	Manmade compound
Perfluoroctanoic Acid (PFOA)	No	2/5/8/11 2019	0.9 (ND – 2.5)	NA	ng/L (ppt)	Manmade compound

4. EPA issued a health advisory (HA) for the combined total concentration of PFOS and PFOA of 70 ppt May 2016.

Fort Drum's drinking water is well below all health advisories. You may obtain all of the monitoring results by calling Chris Whitman at (315) 523-4507.

Table 4: City of Watertown Table of Detected Contaminants							
Contaminant	**Violation Yes/No**	**Sample Date: Mon/Year**	**Level Detected: Average/Max (Range)**	**Regulatory Limit (MCL, TT, AL)**	**MCLG**	**Unit of Measure**	**Likely Source of Contamination**
Nitrate	No	2019	.49	MCL=10	10	mg/L (ppm)	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radium	No	2014	1.2	MCL=5	0	pCi/L	Erosion of natural deposits
Turbidity (NTU)[1]	No	2019	<0.3	TT=<0.3 NTU	NA	NTU	Particles from water mains
Asbestos (MFL)	No	2014	1	MCL=7	7	MFL	Decay of asbestos cement water mains; erosion of natural deposits
Fluoride	No	2019	0.8 (0.63 – 0.99)	MCL=2.2	4	mg/L (ppm)	Added to prevent tooth decay
Copper	No	2019	0.41	AL=1.3	1.3	mg/L (ppm)	Corrosion of household plumbing
Lead[2]	No	2018	12	AL=15	0	ug/L (ppb)	Corrosion of household plumbing
Barium	No	2019	.017	MCL=2	2	mg/L (ppm)	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	No	2019	1.4	MCL=100	100	ug/L (ppb)	Discharge from steel and pulp mills; erosion of natural deposit
Total Trihalomethanes[3]	No	2019	79.3 (19.9-124.7)	MCL=80	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Haloacetic Acid[3]	No	2019	50.3 (19.3-71)	MCL=60	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Unregulated Contaminant Monitoring Rule Four[4]							
HAA6Br	No	2019	3	NA	NA	ug/L (ppb)	Byproducts of drinking water chlorination
HAA9	No	2019	45	NA	NA	ug/L (ppb)	Byproducts of drinking water chlorination
Manganese	No	2019	21.7	NA	NA	ug/L (ppb)	Naturally occurring

City of Watertown Table Footnotes:

1. Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. The highest average distribution turbidity measurement for the year was 0.18. State regulations require that the monthly average turbidity must always be below 5 NTUs. The regulations also require that 95% of the combined filter effluent turbidity levels recorded have measurements below 0.3 NTUs. 100% of the combined filter effluent turbidities were below the MCL.

2. The levels presented represent the 90th percentile of the 30 sites. 90th Percentile Value: The values reported for lead and copper represent the 90th percentile. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead and copper values detected at your water system.

3. This level represents the highest locational running annual average of all the sites sampled and range of all collected samples.

4. All detectable unregulated contaminant results are listed, and their presence does not indicate a health concern. Some unregulated contaminants do not have MCLs and are being monitored to determine future regulations. You may obtain all of the monitoring results by calling Aaron Harvill at (315) 785-7845.

INFORMATION ON LEAD

Fort Drum currently has no leading piping. Table 1 shows that lead was detected at levels well below New York State Action Levels. If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. Fort Drum Public Works 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 two 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 (1-800-426-4791) or www.epa.gov/safewater/lead.

UNREGULATED CONTAMINANT MONITORING RULE

The Unregulated Contaminant Monitoring Rule provides the EPA with valid data on the occurrence of contaminants in drinking water. The EPA can estimate the number of people potentially being exposed and provide an estimate of the levels of exposure. This data set is one of the primary sources of occurrence and exposure information the EPA uses to develop regulatory decisions for contaminants of concern. In 2019, we were required to collect and analyze drinking water samples for the following unregulated contaminants: germanium, manganese, chlorpyrifos, alpha-hexachlorocyclohexane, ethoprop, dimethipin, oxyfluorfen, profenofos, tebuconazole, total permethrin, tribufos, 1-butanol, 2-propen-1-ol, 2-methoxyethanol, brominated haloacetic acids (HAA5, HAA9 and HAA6Br), butylated hydroxyanisole, o-toluidine, quinolone, total organic carbon and bromide. All results greater than the method detection limits are included in Table 2, Fort Drum Table of Detected Contaminants. Voluntary PFAS sampling results are listed in Table 3. For more information, please contact Chris Whitman at (315) 523-4507 or christopher.h.whitman2.civ@mail.mil.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have under-gone 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 from their health care provider about their drinking water.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

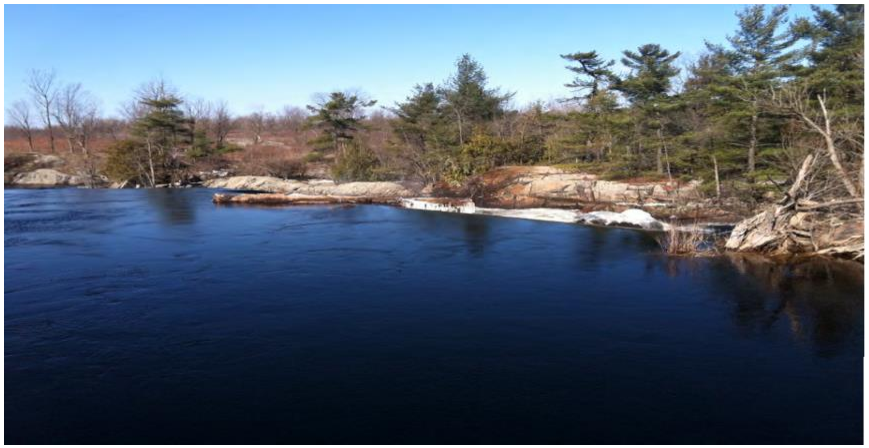
INFORMATION ON FLUORIDE ADDITION

Our system is one of many drinking water systems in New York state that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the U.S. Centers for Disease Control and Prevention, fluoride is very effective in preventing cavities when present in drinking water. To ensure that the fluoride supplement in your water provides optimal dental protection, the NYSDOH requires that we monitor fluoride levels on a daily basis.

Our New York state target for fluoride is 0.7 mg/L. During 2019, continuous and distribution system monitoring showed fluoride levels in your water in the optimal range 100% of the time. None of the monitoring results showed levels that approach the 2.2 mg/l MCL for fluoride.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2019 our system was in compliance with **ALL** New York state and federal drinking water standard operating, monitoring, and reporting requirements. **Fort Drum's water is safe to drink**.



Indian River at Carr Road on Fort Drum.

SYSTEM IMPROVEMENTS

Fort Drum 2019 improvements include:

*Upgraded bulk chlorine tank at the water treatment plant.

*Installed new pumps for metering chlorine

*Ongoing replacement of old piping with new HDPE piping.

Planned 2020 improvements include:

*Install a new UV system at the water treatment plant.

*Continue developing new drinking water production wells.

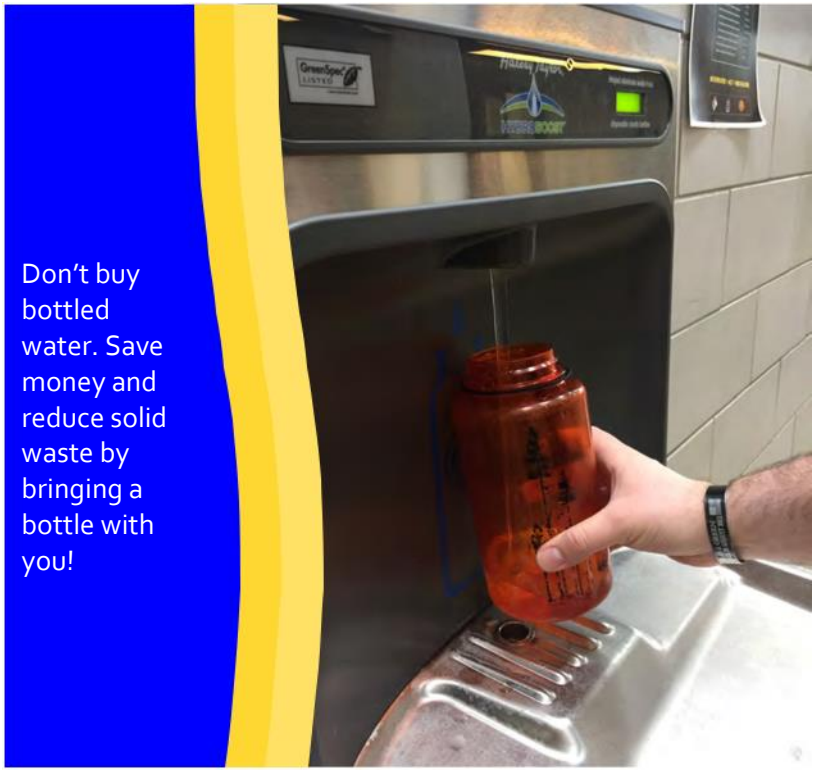
*Replace pressure-reducing valves 1 and 2.

*Ongoing replacement of old piping with new HDPE piping.

HELP SAVE WATER — AND MONEY!

Although our system has adequate water to meet present and future demands, water conservation remains important. Using less water reduces both energy consumption and maintenance costs. Should there be a drought, Fort Drum will be better positioned to meet essential needs.

You can play a role in conserving water by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include loading dishwashers fully, turning off the tap while brushing your teeth, showering more quickly, watering plants only when needed, and checking the faucets in your home for leaks.



Remington Pond is a recharge area for the Pleasant Creek Watershed. This area controls sediment from stormwater runoff, filters pollutants and provides a healthy habitat for fish, plants, and animals.

Help us to protect our water supply by:

- Fixing leaking automobiles
- Picking up trash
- Disposing of chemicals properly
- Applying pesticides and herbicides conservatively

Thank you for allowing us to continue to provide quality drinking water for you and your family. We ask that all of our customers help us protect our water sources, which are the heart of our community.

Questions? Call our office at (315) 523-4507 or email christopher.h.whitman2.civ@mail.mil