261 W. Water Street
Elmira, NY 14901
Annual Drinking Water Quality Report
2017
(Issued February 2018)
PWSID #NY0701008

Dear Elmira Water Board Customers:

This publication contains a summary of the Quality of the water provided to you during the past year. Federal and state requirements set the measuring standards by which we are evaluated. In 2017, the EWB met or exceeded all federal and state requirements

Why Water Conservation is Part of "Going Green"

Only 3% of the world's water is fresh water, and of this 2/3 is stored in ice caps and glaciers. That leaves only 1% of the world's water available for drinking. "Going green" means protecting our water against the constant threat of pollution and conserving our usage.
Save Energy:
Reduce usage of hot water, washing machine, dishwasher, etc; if possible, replace existing high energy consuming appliances.
Save the Environment:
Landscape with plants that require little water, water the lawn less frequently (before dawn/after sunset); try catching rain water for outdoor use. Look for nontoxic alternatives for household products. Avoid using garbage disposals (try to compost food waste); putting food waste, oils, and grease down the drain burdens waste water treatment plants and affects aquatic life and water quality downstream.
Save Money:
Water conservation will lower your water bill, sewer tax, and energy costs.
We are fortunate to have an abundant local water supply; future generations will judge us on how we protected and preserved it.

EWB Statistics	
Average Daily System Use	5.8 Million Gallons
Total Water Produced	2.1 Billion Gallons
Population Served - approximate	54 Thousand
Unaccounted For Water	23.7%
Accounts	17,374
Average Annual Residential Use	46,467
Average Annual Residential Bill	$338.64
Miles Of Water Main	225 Miles
Number Of Hydrants	1,253

Elmira Water Board Directory	
Mark D. LaDouce, General Manager	733-9179
Main Office Monday through Friday 9:00 PM to 4:00 PM Customer Service & Billing Information	733-9179
David McCarty, Chief Water Treatment Operator	732-2277
Filtration Plant 24/7 Water Quality Questions & To Report An Emergency	732-2277
Elmira Water Board Website	www.elmirawaterboard.org
Public Elmira Water Board Meetings 1 Fountain Drive, Elmira, NY Call Main Office for dates and times	733-9179
Other Important Water Numbers	
Chemung County Health Department To answer water questions	737-2019
Chemung County Health Department Website (click on the environmental tab to view the drinking water page)	www.chemungcountyhealth.org
Environmental Protection Agency Safe Drinking Water Hotline	1-800-426-4791

Information on Contaminants and Their Potential Health Effects
Important Education Information if you are Immunocompromised or have an Infant

Although our drinking water meets or exceeds state and federal regulations, some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons are especially at risk. Such persons can be for example: persons with cancer undergoing chemotherapy; persons who have undergone organ transplants; persons with HIV/AIDS or other immune system disorders; the elderly and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EAP)/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the the EPA's Safe Drinking Water Hotline (1-800-426-4791). Please call our office if you have questions.

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 the 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 (1-800-426-4791).

<u>As a precautionary measure, all customers are urged to flush their cold water taps each morning 30 seconds to 2 minutes to remove contaminants that may come from house water lines.</u>

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Filtration and disinfection are the best methods for guarding against microbiological contaminants, although a 100% removal or inactivation cannot be guaranteed. We at the Elmira Water Board have installed adequate filtration and disinfecting equipment for proper and effective treatment of our water.

Drinking Water Sources
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 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 activities. Contaminants that may be present in source water include: microbial, inorganic, pesticides and herbicides, organic, chemical, and radioactive.

In order to ensure that tap water is safe to drink, the state and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the RDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Since 1889 the primary source of water for the EWB has been the Chemung River, in 2017, 57% of our raw water came from the river. Wellfields, Foster Island #40 & #41 contributed 28.7% and Hudson Street #1A, contributed 13.7% of 2017's source water. The first EWB water source (circa 1872) was the Hoffman Reservoir, which is now used on a standby basis and provided .6% of our raw water in 2017.

Instead of using any one source alone, all raw (untreated) water from the river, wells, and reservoir are blended to provide a better water product. We treat the blended water by adding poly aluminum chloride, which causes natural contaminants like silt and germs to coagulate and settle out before filtration. We add chlorine to destroy any viruses, bacteria or organisms that may survive the settling process. We add fluoride for dental health, then add caustic soda and phosphate to help prevent corrosion of household plumbing.

Lead Discussion
Lead. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Elmira Water Board 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*

2017 Water System Improvements
- Replaced 6,000 ft. of cast iron water main
- Roof Replacement Phase II – Filter Plant
- Continue lead service line replacement

2018 Water System Planned Improvements–+
- Replace 6,000 ft. of cast iron water main
- Well Redevelopment
- Continue lead service line replacement

Fluoride Treatment Discussion
The EWB is one of many systems in NYS that provides drinking water with a controlled, low level of fluoride for consumer dental health protection The United States Centers for Disease Control (CDC),recommends a dosage of 0.7 mg/l (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State DOH requires that we monitor fluoride levels on a daily basis.

Detected Substances

<u>In 2017, we tested for over 200 contaminants</u>. The table that follows shows the substances that were detected. <u>None of these contaminants exceeded the regulated levels established by the EPA and NYS</u>.

To obtain more information on the details of the non-detected contaminants and source water results, please visit our website **www.elmirawaterboard.org/awqr** or your Steele Memorial Public library downtown Elmira branch for a copy of the Recent Analytical Results and Sample Plan for the distribution system.

Source Water Assessment Summary
Elmira Water Board #NY0701008
January 19, 2005
The NYS DOH has completed a source water assessment for the Elmira Water Board, based on available information. Possible and actual threats to multiple drinking water sources were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily those contaminants can move about. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become, contaminated. See page 2 of this report for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

The assessment found an elevated susceptibility to contamination for the surface water sources, the Chemung River and Hoffman Reservoir. The amount of agricultural lands in the assessment area results in elevated potential for protozoa and pesticides contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). There are no noteworthy contamination threats associated with other discrete contaminant sources. Finally, it should be noted that relatively high flow velocities make river and reservoir drinking water supplies highly sensitive to existing and new sources of microbial contamination.

The assessment of the five active wells found them to have a medium-high to high susceptibility to microbials, nitrates, industrial solvents, and other industrial contaminants. These ratings are due primarily to the close proximity of industrial/commercial facilities that discharge wastewater into the environment and low intensity residential activities in the assessment area.

Please note that water from all the sources is blended and treated at the filtration plant to provide disinfection and to remove contaminants. There are also wellhead protection rules in place for the wells, and watershed protection rules for the Hoffman Reservoir. These rules give legal authority to forbid activities and discharges that could cause gross contamination in these sources.

Giardia Discussion

Giardia is a microbial pathogen often found in rivers and lakes. Giardia is removed/inactivated through a combination of filtration and disinfection. During 2017, we tested 9 samples of mixed river and well water collected before disinfection and filtration. Low levels of Giardia were reported in 2 of 9 source water samples. Note that our filtration plant is designed and operated to meet State and Federal standards for the removal of Giardia and similar pathogens. Ingestion of Giardia may cause Giardiasis, an intestinal illness. Symptoms may be absent, or mild to severe diarrhea can occur. Fever is rarely present. Occasionally some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risk of Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers or other settings where hand washing practices are poor.

Water Chemistry Definitions, Terms, & Abbreviations

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

"<" = less than
Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLG as possible.

Maximum Contaminant Level Goal (MCLG): The level of 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 disinfectant in drinking water below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

"N/A" not applicable: Not related to the matter described.

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

Parts per million (ppm): Corresponds to one part of liquid in one million parts of liquid.

Parts per billion (ppb): Corresponds to one part of liquid in one billion parts of liquid.

pH units: A measure of acidity or alkalinity of the water.

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

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

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Units of Measure	MCLG	Regulatory Limit (MCL)	Likely Source of Contamination
Inorganic Contaminants:							
Barium	no	**6/19/2017**	**0.09**	ppm	2	2	Erosion of natural deposits
Chloride	no	**In 2017: daily**	**High 83 Low 61 Average 66**	ppm	n/a	250	Naturally occurring; use of road salt
Lead - sampled at customer faucets	no	**August, 2017**	***90th % 4.0 High 6.2 Low <.5**	ppb	0	AL=15	Corrosion of household plumbing systems
*90th Percentile: Out of 30 samples tested 90% of the samples had a lead concentration of 4.0 ppb or less with 0 samples exceeding the 15 ppb action level (AL)							
Copper - sampled at customer faucets	no	**August, 2017**	***90th % .10 High .23 Low .003**	ppm	1.3	AL=1.3	Corrosion of household plumbing systems
*90th Percentile: Out of 30 samples tested 90% of the samples had a copper concentration of .10 ppm or less with 0 samples exceeding the 1.3 ppm action level (AL)							
Fluoride	no	**In 2017: daily**	**High .74 Low .61 Average .69**	ppm	n/a	2.2	Water additive which promotes strong teeth
Nitrates	no	**6/19/2017**	**1.03**	ppm	10	10	Runoff from fertilizer use
***Sodium**	no	**6/19/2017**	**39**	ppm	n/a	no designated limits	Naturally occurring; use of road salt
*Sodium: Water containing more than 20 ppm of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 ppm of sodium should not be used for drinking by people on moderately restricted sodium diets. Sodium in excess could cause problems for individuals with hypertension.							

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. For this reason some of our data, though representative, is more than one year old.

Disinfection By-Products:							
Total Organic Carbon (TOC) Source	no	**In 2017: monthly**	**High 2.7 Low 1.8 Average 2.2**	ppm	n/a	n/a	Naturally occurring organic materials from decaying leaves & plants
Total Organic Carbon (TOC) Treated	no	**In 2017: monthly**	**High 2.1 Low 1.3 Average 1.7**	ppm	TT	TT	Source same as above, treated samples measure the effectiveness of our water treatment process
Total Trihalomethane (TTHM) *LRAA (Locational Running Annual Average): average of last 4 quarters	no	**In 2017: 3/20, 6/19, 9/18, 12/19**	**Quarterly Individual Samples High 70 Low 21** **Highest *LRAA at 8 sites 60**	ppb	n/a	*LRAA Quarterly Average 80	By-product of drinking water chlorination needed to kill harmful organisms; formed when source water contains large amounts of organic matter
Haloacetic Acids (HAA) *LRAA (Locational Running Annual Average): average of last 4 quarters	no	**In 2017: 3/20, 6/19, 9/18, 12/19**	**Quarterly Individual Samples High 27 Low 3** **Highest *LRAA at 8 sites 19**	ppb	n/a	*LRAA Quarterly Average 60	By-product of drinking water chlorination needed to kill harmful organisms
Microbiological Contaminants:							
***Turbidity after purification plant**	no	**In 2017: every 4 hours**	**100% of 2,190 results < 0.3**	ntu	n/a	TT=0.3	Soil runoff
*Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.							
Turbidity at customer tap	no	**In 2017: daily**	**High .41 Low .04 Average .07**	ntu	n/a	TT=5	Suspended particles in water from piping
Chlorine	no	**In 2017: daily**	**High 1.07 Low .06 Average .63**	ppm	MRDLG 4.0	MRDL 4.0	Level of disinfectant necessary for control of microbial contaminants
***Total Coliform Bacteria**	no	**3/24/2017 10/24/2017**	**1 Present, 72 Absent 1 Present, 72 Absent**	Presence or Absence		TT= Present in no more than 3 samples each month	Naturally present in the environment
* We routinely collect 70 samples each month/840 per year. In 2017, two sample were found positive. Additional samples did not confirm the original results.							
Orthophosphate	no	**In 2017: daily**	**High 1.17 Low .91 Average 1.03**	ppm	n/a	TT=0.5-5.0	Water additive for corrosion control
pH	no	**In 2017: daily**	**High 7.9 Low 7.6 Average 7.7**	pH units	n/a	TT=>7.4	A pH value below 7 can release metals like lead from household plumbing, while a level above 7 reduces corrosion
Alkalinity	no	**In 2017: daily**	**High 125 Low 96 Average 112**	ppm	n/a	TT=>39	Water additive for corrosion control

Special Testing: *Every 5 years EPA requires testing for new contaminants to help decide if they should be regulated. The contaminants that were tested for and detected can be found in the table below.The samples were collected at 2 separate sample sites in November 2013, February 2014, May 2014 and August 2014.You may obtain the monitoring results by calling Rose Mary Martino, Analytical Chemist,Filtration Plant of the Elmira Water Board at 607-732-2277.*

Analyte	Violation Yes/No	Date of Sample	Level Detected	Units of Measure	MCLG	Regulatory Limit (MCL)	Likely Source of Contamination
Strontium	no	**8 samples in 2014**	**High .10 Low .07 Average .08**	ppm	***N/A***	***N/A***	***Naturally occurring element***
Chromium (total)	no	**8 samples in 2014**	**High .30 Low 0 Average .24**	ppb	100	100	Erosion of natural deposits
Chromium-6	no	**8 samples in 2014**	**High .06 Low .03 Average .04**	ppb	***N/A***	***N/A***	***Naturally occurring element***
Chlorate	no	**8 samples in 2014**	**High .08 Low 0 Average .01**	ppm	***N/A***	***N/A***	***By-product of drinking water chlorination***

In 2017, over 3,000 total water samples were taken with no violations found!