



2018 WATER QUALITY REPORT

WATER QUALITY REPORT FOR THE YEAR 2018

PWSID 6250028

Serving the City of Erie, Lawrence Park, Wesleyville, Harborcreek, Millcreek and portions of Summit, and Greene Townships

Dear Valued Customers of the Erie Water Works,

In today's day and age technology seems to be changing almost daily. Here at the Erie Water Works (EWW), we've embraced several advancements in technology to improve the efficiency of our operations allowing us to deliver reasonably priced quality water to our customers.

In 2013, the EWW completed the installation of a state-of-the-art membrane filtration system at its Richard S. Wasielewski Water Treatment Plant (RSW WTP). This system consistently produces water that exceeds all federal and state drinking water standards. In addition to producing the best water available from a public water provider, the automation of the new system minimizes the potential for human error while also reducing the daily tasks of the EWW employees operating the treatment plant.

In 2018, EWW transitioned from radio frequency to fiber-optic communications and completed a full system upgrade linking its twenty-three remote facilities, making it possible for our operators to monitor those locations from our central control center at the RSW WTP. The fiber-optic network has proven to be very reliable and provides the bandwidth needed to support EWW's Supervisory Control and Data Acquisition system, which is used to control our facilities, as well as a comprehensive security system.

Looking ahead at 2019, the EWW will be continuing its technological advancements. A new payroll system is ready to go online in the spring. A mobile work order management system is being expanded to all facets of EWW operations, allowing our state-of-the-art Geographic Information System to reach its full potential. A new enterprise resource planning system will run all the business functions (accounting, billing, purchasing, etc.) and will provide a platform to integrate the various systems currently in use. Once completed, the 1.5 year implementation effort will result in a fully integrated, fully functional, enterprise-wide system.

All of these advancements keep your water system running smoothly and efficiently ensuring a continuous, uninterrupted, reasonably priced supply of high quality water for years to come.

Sincerely,

Paul D. Vojtek
Chief Executive Officer / Chief Financial Officer
"World-Class Water, First-Class Service"

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda. (This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.)

Source of Water

Our water source is exclusively surface water from Lake Erie. We are fortunate to operate two water filtration plants where raw water is treated; the Chestnut Street Water Treatment Plant and the Richard S. Wasielewski Water Treatment Plant. A Source Water Assessment and Protection (SWAP) program was completed and documented by the Erie Water Works in 2003. This program is a way to

identify any sources of potential contamination that could affect the quality of our drinking water. The report indicated that there are no major potential sources of contamination to our source supply from accidental releases into the environment. The summary SWAP report is available online at www.eriewater.org/what-we-do/reports/ or at the offices of the Erie County Health Department.

Special Information for Immuno-Compromised Individuals

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 infections by *Cryptosporidium* and other microbiological contaminants are available from the *Safe Drinking Water Hotline* (800-426-4791).

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to federal and state laws. The following tables show the results of our monitoring for the period of January 1 to December 31, 2018. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Although not required by regulation, the Erie Water Works has chosen to continue testing for these contaminants on an annual basis.

Abbreviations and Definitions

Throughout this document you may find some abbreviations that are not familiar to you. To help you understand these terms we've provided the following definitions:

EWW	Erie Water Works
PA DEP	Pennsylvania Department of Environmental Protection
CP	Chestnut Plant
WP	Wasielewski Plant
Dist	Distribution Sample
ACC	Alternative Compliance Criteria
AL	Action Level: the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
MCL	Maximum Contaminant Level: the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal: 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.
MRDL	Maximum Residual Disinfection Level: 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.
MRDLG	Maximum Residual Disinfection Level Goal: the level of a drinking water disinfectant below which there is known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
cm⁻¹	Reciprocal centimeter or wave number; a unit of energy
ntu	Nephelometric turbidity unit: a measure of the clarity of water
ppb	Parts per billion, or micrograms per liter (µg/L)
pCi/L	Picocuries per liter: a measure of radioactivity in water
ppm	Parts per million, or milligrams per liter (mg/L)
SUVA	Specific Ultra Violet Absorbance
TT	Treatment Technique: a required process intended to reduce the level of a contaminant in drinking water.

ERIE DETECTED SAMPLE RESULTS

Public Water System ID: 6250028

Inorganic Contaminants

Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Source of Contamination
Aluminum (ppb)	WP	N	3.4	2.4-4.4	50-200	(na)	Erosion of natural deposits; Leaching from rocks and soil
	CP	N	22				
	Dist	N	50.2	6.6-180			
Arsenic (ppb)	WP	N	0.5	ND-1.1	10	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
	Dist	N	1.1	1.0-1.2			
Barium (ppm)	WP	N	0.020		2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
	CP	N	0.022				
Chromium (ppb)	WP	N	4.6	ND-9.1	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Copper (ppm)	WP	N	0.0107	0.0053 - 0.016	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
	CP	N	0.0017				
Fluoride (ppm) (a)	WP	N	0.55	0.50 - 0.60	2	2	Erosion of natural deposits; water additive which promotes stronger teeth; discharge from fertilizer and aluminum factories
	CP	N	0.50				
Iron (ppb)	WP	N	11	ND-22	300	(na)	Erosion of natural deposits; corrosion of household plumbing
	Dist	N	51	20-210			
Manganese (ppb)	Dist	N	5.3	2.0-13.0	50	50	Erosion of natural deposits; discharge from metal refineries; runoff from agriculture
Nitrate (ppm)	WP	N	0.20	0.10 - 0.30	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
	CP	N	0.20				
Orthophosphate (ppm)	Dist	N	0.36	0.15-0.62	(na)	(na)	Water additive used for corrosion control
Sodium (ppm)	WP	N	13	11-14	(na)	(na)	Erosion of natural deposits; wastewater effluent; runoff from road salting
	CP	N	11				
	Dist	N	14	12-15			
Sulfate (ppm)	WP	N	20	19-21	250	(na)	Erosion of natural deposits; Leaching from rocks and soil
	CP	N	28				
Zinc (ppb)	WP	N	1.5	ND-5.8	(na)	(na)	Erosion of natural deposits; Discharge of mining wastes; discharge from metal refineries;
	Dist	N	8.1	5.0-13.0			

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ERIE DETECTED SAMPLE RESULTS- Continued

Public Water System ID: 6250028

Disinfection and Disinfection By Products

Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Source of Contamination
Haloacetic Acids (ppb) (Highest Running Average)	Dist	N	37.1	11.7-61	(na)	60	Byproduct of drinking water disinfection
Total Trihalomethanes (ppb) (Highest Running Average)	WP	N	21.4	11.9-36.2	(na)	80	Byproduct of drinking water disinfection
	CP	N	7.2				
	Dist	N	53.6	20.8-98.5			
Chlorine (ppm) (Highest monthly average)	Dist	N	1.43	1.28-1.43	MRDLG= 4	MRDL= 4	Water additive used to control microbes

Radiological Contaminants

Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Source of Contamination
Gross Alpha (pCi/L)	WP	N	1.2		15	15	Erosion of natural deposits
	CP	N	4.4				
Gross Beta (pCi/L) (b)	WP	N	2.3		0	50	Decay of natural and man-made deposits
	CP	N	7.0				
Radium (pCi/L)	CP	N	2.0		5	5	Erosion of natural deposits

Microbiological Contaminants

Turbidity

Contaminant	MLC	MCLG	Level Detected	Sample Date	Violation Y/N	Sources of Contamination
Turbidity (CFE) (ntu)	TT= 1 NTU for a single measurement (WP)	0	1.11	10/22/2018	Y	Soil runoff
	TT= 95% of monthly samples < 0.3 NTU (WP)	0	99.9%	October 2018	N	Soil runoff
	TT= 1 NTU for a single measurement (CP)	0	0.20	1/2/2018	N	Soil runoff
	TT= 95% of monthly samples < 0.3 NTU (CP)	0	100.0%	January 2018	N	Soil runoff

Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Source of Contamination
Turbidity (CFE) (ntu)	WP	N	0.019	0.013-1.11	(na)	TT	Soil runoff
	CP	N	0.041	0.015-0.204	(na)		

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ERIE DETECTED SAMPLE RESULTS- Continued

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Entry Point Disinfectant Residual

Contaminant	Location	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Chlorine	WP	0.2	0.59	0.59-1.70	ppm	1/18/2018	N	Water additive used to control microbes
	CP	0.2	1.21	1.21-1.46	ppm	1/12/2018	N	

Lead and Copper Study

Contaminant	Action Level (AL)	MCLG	90th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead (2018)	15	0	1.1	ppb	0 of 57	N	Corrosion of household plumbing systems; erosion of natural
Copper (2018)	1.3	1.3	0.11	ppm	0 of 57	N	

Microbial

Contaminant	TT	MCLG	Assessments/ Corrective Actions	Violation Y/N	Sources of Contamination
Total Coliform Bacteria	Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement	(na)	See detailed description under "Detected Contaminants Health Effects Language and Corrective Actions" section	N	Naturally present in the environment

Total Organic Carbon (TOC)

Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Source of Contamination
SUVA (ppm)	WP	N	1.19	1.00-1.40	(na)	(na)	Test to determine TOC reactivity
	CP	N	1.00				
DOC (ppm)	WP	N	2.12	1.86-2.68	(na)	(na)	Test to determine TOC reactivity
	CP	N	1.76				
UV254 (cm ⁻¹)	WP	N	0.025	0.022-0.031	(na)	(na)	Test to determine TOC reactivity
	CP	N	0.027				
Contaminant	Range of % Removal Required		Range of Percent Removal achieved		Number of quarters out of compliance	Violation Y/N	Sources of Contamination
TOC	25% (CP only)		22.5 - 26.9%		0	N	Naturally present in the environment
			ACC used when below 25%		SUVA		

(a) EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.

(b) EPA considers 50 pCi/L to be the level of concern for beta particles

(na) Not Applicable

Detected Contaminants Health Effects Language and Corrective Actions

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. If coliforms are found this indicates the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct an assessment to identify the problems and to correct any problems that were found during these assessments. Only 20 of the 1,912 samples collected throughout 2018 were found to be positive for Total Coliform bacteria. In September 2018 we had 14 samples test positive for Total Coliform in a 72 hour period resulting in a Level 1 Assessment. We completed the assessment and all check samples came back negative for Total Coliform indicating that the positive result was likely caused by sampling methods

or reagents rather than the water itself. In addition, we were required to take zero corrective actions and therefore did not incur a violation.

Turbidity: Turbidity (the cloudiness of water) has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. The Erie Water Works experienced high turbidity values upon start up of the primary Low Service District pumps which had been down for required preventative maintenance. The turbidity spike exceeded the DEP limit of 1.0 NTU. However, in less than 15 minutes the turbidity level was returned to 0.020 NTU.

Educational Information

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 can pick up substances resulting from the presence of animals or 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 run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater run-off, 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 run-off, 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 and DEP prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and DEP regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 Environmental Protection Agency's *Safe Drinking Water Hotline* (800-426-4791).

Educational Information: Continued

Information about Lead

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 Erie Water 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 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>.

Information about Nitrate

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your

health care provider.

Unregulated Contaminant Monitoring Rule 4 (UCMR4)

The Environmental Protection Agency (EPA) requires many water systems throughout the country to test for a list of potential contaminants that the federal government may regulate in future years. The Erie Water Works will be sampling for the new list of potential contaminants from October 2018 through July 2019.

Pharmaceuticals and Personal Care Products

There is not an official list of pharmaceuticals or personal care products that are required to be tested for by regulation in the drinking water. The Erie Water Works tested for 57 of the most common potential contaminants in 2018. Like most drinking water systems in the country, we found a few present at very low concentrations (parts per trillion, or nanograms per liter) that the EPA and PA DEP do not consider to be of concern to human health. The list of contaminants that were found in low concentration include: acesulfame-K (artificial sweetener), cotinine (metabolite of nicotine), DEET (insect repellent), meprobamate (drug to treat anxiety), Salinomycin (antibacterial and coccidiostat ionophore therapeutic drug), sucralose (artificial sweetener), and TCPP (flame retardant).

Have Questions?

If you have any questions about this report, please contact Ron Costantini, EWW Manager of Administration, at 814-870-8000, ext. 306. Due to the complex nature of water treatment, sometimes it is very difficult to provide an accurate response without first gathering factual information. For that reason, we prefer questions be in writing so they can be directed to the proper individuals to provide the most complete and accurate information about our product and services. We also encourage you to attend any of our regularly scheduled board meetings. They are open to the public and are held on the third Thursday of every month at 3:00 PM at the John J. McCormick Jr. Administration Building, 340 West Bayfront Parkway, Erie, PA 16507-2004. Normal business hours: Monday - Friday 8:00 a.m. - 5:00 p.m.



EWW 24 Hour Emergency Phone: 814-870-8087
Personnel are on duty 24/7

Reverse 9-1-1 Can Notify You In An Emergency... Help Us Help YOU.
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The Emergency Notification Call-Out System can deliver emergency messages to every landline in Erie County, PA, however, cell phones, TTY/TDD, and Internet phone service require registration. Please visit our website at www.eriewater.org today to make sure our records include your most accurate information. Our website also offers easy-to-use instructions on how to update your information so you can be notified of a water related emergency, water disruption or other emergency that may impact your home.