



2013 WATER QUALITY REPORT

We are pleased to present to you our WATER QUALITY REPORT FOR THE YEAR 2013 PWSID 6250096

Serving the Customers of McKean Township and McKean Borough

Dear Valued Customers of the Erie Water Works:

Thank you for taking the time to read the 2013 Erie Water Works (EWW) Water Quality Report. Over the years, interest in the public's water supply has steadily grown. Once again, the EWW is happy to issue this report, as we feel it is important to keep our customers informed about their water quality.

In addition to the required water quality information, the EWW has included a brief summary of capital projects that have been undertaken to improve the water service our customers receive. The most notable of these projects is the total renovation of the Richard S. Wasielewski Water Treatment Plant (RSW WTP). In November 2013, the EWW proudly brought into service the largest membrane-equipped water treatment plant in Pennsylvania. This project completion came after more than seven years of evaluation, planning and construction. The RSW WTP is capable of producing 45 million gallons of the highest quality water available from a public water supplier!

Here at the EWW, we consider it a privilege to serve the residents and businesses in NW Pennsylvania. We continue to strive to exceed our customers' service expectations while providing a safe, reliable source of high quality water.

For more information on the Erie Water Works, please visit our website at www.eriewater.org. Thank you once again for your interest in your water supply.

Sincerely,

Paul D. Wojtek
Chief Executive Officer /
Chief Financial Officer

Este informe contiene información importante pertinente a la calidad de agua potable en su comunidad. Si tiene dificultades entendiendo su contenido, le recomendamos que, por favor, busque ayuda de alguien que le pueda ayudar a traducirlo o que le pueda explicar su contenido.

The Objective of This Report

The objective of this report is to inform you about the water quality and related services the Erie Water Works provides to you every day. The mission of the Erie Water Works is ***"to guarantee a continuous, uninterrupted, reasonably priced supply of quality water to its customers, which assures public health while promoting regional stability and future development."***

We want you to know that EWW works continuously to improve the water treatment process. We are committed to ensuring the production and distribution of high quality water.

The EWW raw water supply is obtained exclusively from Lake Erie. We are fortunate to operate two separate raw water intakes that serve two water filtration plants and pumping stations. Both plants are directly connected to a complex and ever expanding network of distribution lines that supply high quality finished water to all of EWW's 52,000 customers. The older of our two facilities, the Chestnut Street Water Treatment Plant, has

an intake that is 60 inches in diameter and extends 17,641 feet into Lake Erie and terminates at an intake crib submerged under 25 feet of water. Our newer facility, the Richard S. Wasielewski Water Treatment Plant, has an intake that is 72 inches in diameter and 8,745 feet in length. This line also extends into Lake Erie and terminates at another intake crib submerged under 25 feet of water.



RSW WTP Ribbon Cutting Ceremony

The Protection of our Public Water System:
Cross-Connection Control

The Erie Water Works is committed to providing safe and reliable drinking water to its customers. The Cross-Connection Control Program complies with the U. S. Environmental Protection Agency regulations regarding safe drinking water and is responsible to ensure that no contaminated water can flow in reverse back into the public water distribution system. The return of any water back into the public distribution system after it enters the customer's piping system is not permitted. A cross-connection is an actual or potential connection between potable water piping and a source of contamination. It is the responsibility of every consumer to protect the public water system and install backflow prevention assemblies or devices at the point that public water is delivered to the customer. Backflow can occur when there is the condition of backsiphonage or loss of pressure. Backflow assemblies are required to be installed within all residential buildings having more than three units, and at all commercial, industrial, and institutional facilities. Backflow assemblies must be tested annually and rebuilt every five years by a certified and EWW licensed backflow tester. All residences having less than three units are required to have a residential non-testable dual check backflow device.

For additional information on Cross-Connection Control, please email backflowprevention@eriewaterworks.org or call 814-870-8000 ext. 207.



Wilkins 700XL residential dual check backflow preventer

Abbreviations and Definitions

In the following table you will find many terms and abbreviations with which you may not be familiar. To help you better understand these terms we've provided the following definitions:

EWW	- Erie Water Works
PADEP	- Pennsylvania Department of Environmental Protection
CP	- Chestnut Plant
WP	- Wasielewski Plant
ND	- Non-Detects - laboratory analysis indicates that the contaminant is not present at a detectable level.
ppm	- Parts per million or milligrams per liter.
mg/l	- Milligrams per liter - Denotes one part per million parts. Equivalent to one drop of water diluted in 50 liters of water. A part per million and a milligram per liter are equal.
ppb	- Parts per billion - Denotes one part per billion parts. Equivalent to one drop of water diluted in 250 chemical drums.
pCi/l	- Picrocuries per liter - A measure of radioactivity in water.
ntu	- Nephelometric Turbidity Unit - A measure of the clarity of water. Turbidity in excess of 5 ntu's is just noticeable to the average person.
AL	- Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
TT	- Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.
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's 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. MCLG's allow for a margin of safety.
MRDLG	- Maximum Residual Disinfection Level Goal
Y/N	- Yes/No
MGD	- Million Gallons per Day
SUVA	- Specific Ultra Violet Absorbance

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TEST RESULTS FOR PWSID 6250096

MICROBIOLOGICAL CONTAMINANTS							
Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
Turbidity (ntu)	CP	N	0.065	0.021 - 0.148	n/a	TT	Soil runoff
	WP		0.019	0.008 - 0.099	n/a		
Giardia (cysts/l)	Lake Erie Influent	N	ND	ND in 12 samples	0	Surface Water Treatment = TT	Naturally present in the environment
Cryptosporidium (cysts/l)	Lake Erie Influent		ND	ND in 12 samples			
RADIOLOGICAL CONTAMINANTS - NONE DETECTED							
Beta/photon emitter (pCi/l)	CS	N	ND	(a)	0	(b) 50	Decay of natural and man-made deposits
	WP	N	2.80	(a)			
INORGANIC CONTAMINANTS							
Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	CS	N	0.021	0.019 - 0.024	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
	WP	N	0.018	0.017 - 0.019			
Copper (ppm)	Plant	N	0.0002	ND - 0.002	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
	McKean	N	0.1545	0.027 - 0.415			
Fluoride (ppm)	CP	N	0.716	0.230 - 1.16	2	2	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
	WP		0.671	0.230 - 1.01			
	McKean		0.722	0.521 - 0.950			
Lead (ppb)	Plant	N	ND		15	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
	McKean	N	1.1	ND - 14.0			
Nitrate (as Nitrogen) (ppm)	CP	N	0.105	ND - 0.21	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
	WP		0.145	ND - 0.22			
SYNTHETIC ORGANIC CONTAMINANTS INCLUDING PESTICIDES AND HERBICIDES							
Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
Atrazine (ppb)	CP	N	0.061	0.058 - 0.064	3	3	Runoff from herbicide used on row crops
	WP	N	0.049	ND - 0.069			
VOLATILE ORGANIC CONTAMINANTS - NONE DETECTED							
<p>(a) Only one sample taken per plant.</p> <p>(b) The MCL for Beta particles is 4 mrem/yr. EPA considers 50 pCi/l to be the level of concern for Beta particles.</p>							

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TEST RESULTS FOR PWSID 6250096 - CONTINUED

DISINFECTION AND DISINFECTION BY PRODUCTS								
Contaminant (Unit of measurement)	Location	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination	
TTHM (ppb) Total trihalomethanes Highest Running Average	McKean	N	59.93 Aug	46.88 - 59.93	0	80	By-product of drinking water chlorination	
HAA (ppb) Haloacetic Acids Highest Running Average	McKean	N	37.20 Feb	27.73 - 37.20	0	60	By-product of drinking water chlorination	
Chlorine (ppm)	CP	N	0.98	0.22 - 1.18		MRDLG = 4	Water additive used to control microbes	
	WP	N	1.21	0.04 - 1.90				
	McKean	N	0.60	0.03 - 1.38				
Total Organic Carbon (ppm)	Plant	N	1.97	ND - 4.3	TT	TT	Naturally occurring in the environment.	
SUVA (ppm)	Plant	N	1.16	ND - 1.7			Test to determine TOC reactivity.	
ENTRY POINT DISINFECTANT RESIDUAL ENTRY								
Contaminant	Location	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Chlorine	CP	0.2	0.52	0.52 - 1.40	ppm	8/20/2013	N	Water additive to control microbes
Chlorine	WP	0.2	0.33	0.33 - 1.47	ppm	12/9/2013	N	
LEAD AND COPPER (McKean)								
Contaminant	Action Level (AL)		MCLG	90th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead (2013) (c)	15		0	0.7	ppb	0 of 13	N	Corrosion of household plumbing
Copper (2013) (c)	1.3		1.3	0.313	ppm	0 of 13	N	Corrosion of household plumbing
MICROBIAL (McKean)								
Contaminant	MCL		MCLG	Highest # or % of Positive Samples		Violation Y/N	Sources of Contamination	
Total Coliform Bacteria McKean system	For systems that collect < 40 samples/month: More than 1 positive monthly sample. For systems that collect > 40 samples/month: 5% of monthly samples are positive		0	ND in 36 Samples		N	Naturally present in the environment	
Fecal Coliform Bacteria or E. coli McKean System	0		0	ND in 36 Samples		N	Human and animal fecal waste	
TURBIDITY								
Contaminant	MLC		MCLG	Level Detected	Sample Date		Violation Y/N	Sources of Contamination
Turbidity	TT = 1 NTU for a single measurement		0	0.148	3/31/13 (CS)		N	Soil runoff
	TT = 95% of monthly samples < 0.3 NTU		0	99.45%	March 2013		N	Soil runoff
TOTAL ORGANIC CARBON (TOC)								
Contaminant	Range of % Removal Required		Range of Percent Removal achieved		Number of quarters out of compliance		Violation Y/N	Sources of Contamination
TOC	25%		8.3% to 41.9%		0		N	Naturally present in the environment
			Alternative Compliance Criteria Used.		SUVA			
(c) Tested every three years								

Explanation of Test Results

Total Coliform: The Total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public by newspaper, television, radio or emergency notification by phone. To comply with the stricter regulation, the EWW adjusted the average amount of chlorine in the distribution system. Using 2013 data, only two samples in over 1,400 collected contained Total Coliform Bacteria. Both of these samples occurred in October of 2013. All follow-up tests were bacteria free.

Nitrates: As a precaution, the EWW will notify the Erie County Health department, physicians and other health care providers in this area if there is ever a high level of nitrates in our water supply.

Trihalomethanes: Some people who drink water containing trihalomethanes (TTHM) 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.

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 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 at 1-800-426-479 or at www.epa.gov/safewater/lead**.

Additional Safety Precautions

Our system is not required to annually monitor for many contaminants because years of testing have indicated these substances do not occur in our source water. Although not required by regulation, the EWW chooses to continue regular testing for many of these contaminants.



THIS REPORT IS ALSO AVAILABLE AT
WWW.ERIEWATER.ORG



System Improvements and Water Rates

In order to maintain a safe and dependable water supply, it is necessary to constantly make improvements to the water system. Because some of the costs associated with system improvements may impact the rate structure, periodic rate adjustments are necessary to complete some of the improvements. However, EWW is committed to fiscal responsibility and will establish rates that are both fair and equitable. Since its inception in 1992 as a municipal authority, the Erie Water Works has invested more than \$216 million for system rehabilitation, upgrades and improvements related to ENHANCING OUR REGION'S WATER SYSTEM. Yet, our rates remain among the least expensive compared to other large metropolitan areas across the Commonwealth of Pennsylvania. If you used the same amount of water in Pittsburgh, you would pay nearly 1.3 times the Erie rate; in Harrisburg, it would be about 1.3 times the Erie rate; and if you were a customer of Pennsylvania-American Water, you would pay about 2.3 times the Erie Water Works rate.

Using Water Wisely

EWW ensures that fresh, clean drinking water is yours to use whenever you need it. Lake Erie provides the City of Erie and surrounding communities with an abundant supply of high quality water. EWW has sufficient pumping, storage and distribution capacity to meet the water needs for all EWW customers. However, EWW encourages you to use water wisely. Please be a good steward of the environment and prevent water waste. From cleaning your driveway with a broom instead a hose, to checking your house for leaks, there are many simple steps we can all take to preserve our water source.

Source Water Assessment and Protection Program

The Erie Water Works completed and documented a Source Water Assessment and Protection (SWAP) program in 2003. This program identified any sources of potential contamination that may affect the quality of the drinking water. This program was mandated in 1996 as part of the reauthorized Safe Drinking Water Act (SDWA). The summary SWAP report is available to view at www.eriewater.org/our-water/water-quality/ or at the offices of the Erie County Health Department. The report indicates that there are no major potential sources of contamination to our source supply from accidental releases into the environment.



Featured Capital Improvement Projects

In 2013, EWW invested nearly \$19 Million into the water system through Capital Improvement projects. Since 1992, EWW has invested over \$216 Million into the renewal or replacement of infrastructure needed to supply potable water to a population of more than 180,000 people in NW Erie County. Selecting projects that provide the most functional and economic benefit to EWW customers is very important to the Board of Directors and staff.

A major capital project completed in 2013 was the construction of a 3.7 million gallon (MG) water storage reservoir (shown at right), known as the Davison Avenue Reservoir. This reservoir will provide enhanced fire protection and emergency storage which increases the reliability of the water system.



3.7 MG Davison Avenue Reservoir

Another key project completed in 2013 involved the largest conversion of a conventional filter treatment plant to membrane filtration treatment plant in the United States. The project, known as the Membrane Filtration Retrofit and Improvement Project, occurred at the **Richard S. Wasielewski Water Treatment Plant (RSW WTP)**, shown below. Membrane filtration is an effective treatment process that will enable EWW to meet existing and future drinking water regulations for many years.



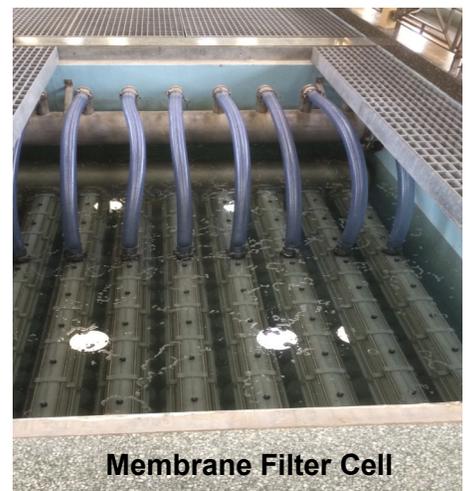
Wasielewski WTP Membrane Filter Gallery



Wasielewski WTP Membranes Filtration Modules

The RSW WTP utilizes cutting edge Ultrafiltration (UF) membranes, which provide a physical barrier that prevents bacteria and many viruses from passing through it. Membrane fiber pores are 75-200 times smaller than Cryptosporidium or Giardia. Relatively speaking, if the membrane pores were the size of a single grain of sand (they are smaller than that), Cryptosporidium would be the size of a golf ball. The UF membranes are made of Polyvinylidene Fluoride (PVDF) oxidant resistant fibers. There are 10,560 fibers in each of the 5,216 Membrane Modules (tubes shown upper right), equating to a total of 55,080,960 total fibers in the system installed.

The RSW WTP first opened in 1932 and is the primary treatment facility for EWW. The upgrades to the RSW WTP will result in a maximum day treatment capacity of 45 MGD, enabling EWW to provide the highest quality drinking water to the Erie Region.



Membrane Filter Cell

Special Information for Immuno-Compromised Individuals

While our water is safe for the vast majority of our customers, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those 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 of infections. These people should seek advice from their health care providers. Guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline 1-800-426-4791**.

The EWW constantly monitors the raw water supply for various contaminants. We routinely monitor for Cryptosporidium and Giardia in our source water. We have analyzed 12 source water samples during the year 2013. No Active Cryptosporidium was found in any sample during 2013 and we did not find any active Giardia organism the entire year. We believe it is important for you to know that Cryptosporidium may cause serious illness in immuno-compromised people, such as those with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders. These individuals should seek advice from their health care providers.

Have Questions? We Have Answers.

If you have any questions about this report, please contact John Presogna, EWW Laboratory Manager, at 814-870-8000, ext. 410. The complex nature of water treatment sometimes makes it very difficult to provide an accurate response without first gathering factual information. We prefer your questions be in writing so they can be directed to the proper individual(s). We want our valued customers to be fully informed about our product and services. We 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 EWW Administration Building.**

ADMINISTRATION BUILDING
340 West Bayfront Parkway
Erie, PA 16507
Monday through Friday,
8:00 a.m. to 5:00 p.m.
Phone: 814-870-8000

MAILING ADDRESS
Erie Water Works
340 West Bayfront Parkway
Erie, PA 16507-2004



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.
Please Update Your Information Today at www.eriewater.org**

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.