Report by:
Berlin Water Control Commission
240 Kensington Road - Kensington, CT 06037

Date: April 8, 2024 **REVISED 5/29/24**

2023 BERLIN WATER CONTROL COMMISSION

POTABLE WATER CONFIDENCE REPORT

JANUARY 1, 2023 TO DECEMBER 31, 2023

For over fifty (50) years, the Berlin Water Control Commission has provided the residents of Berlin, Connecticut with a safe, palatable supply of drinking water. This report has been prepared to provide the approximately 2,900 residential, commercial and industrial customers of this supply with the confidence that the water they consume meets and, in most cases, exceeds all State and Federal requirements for drinking water.

The Berlin Water Control Commission meets monthly (the fourth Tuesday) at 7:00 p.m. at the Berlin Town Hall. Agendas and meeting times are on the Town Website: https://www.berlinct.gov and customers are encouraged to attend the meetings (also available via Zoom®).

The Berlin Water Control Commission was established in 1966. During the period extending from January 1, 2023 to December 31, 2023, produced **Three Hundred Eighty-Five Million, Three Hundred Seven Thousand, Sixty Eight (385,307,068) gallons** of water to its residential, commercial, and industrial customers.

The Berlin Water Control Commission produced **50.07% (192,891,712 gallons) of its water needs, and purchased 42.70% (164,542,856 gallons) from the New Britain Water Department and 7.23% (27,872,500 gallons) from the Cromwell Fire District.** This report covers that portion of the supply originating from wells owned and operated by the Commission. Reports on those portions of the supply provided by the New Britain Water Department and the Cromwell Fire District can be provided upon request.

The Berlin Water Control Commission supply, excluding that provided by the New Britain Water Department and the Cromwell Interconnection, comes from two (2) sources:
Elton Well #1B and Elton Well #2A.

A third (3rd) well, Swede Pond: Production Well #2, installed in 1973 (a well with a depth of 92 feet and a capacity of 550 gallons per minute) was replaced by Well #2A in 1996.

Elton Well #1 was installed in 1973 and rehabilitated in 1994 and 1997; Well #1 was replaced in 1998 by a new Well #1A. Well #1A was replaced by Well 1B in 2017.

Elton Well #2A (with a depth of 95 feet and a production of 350 gallons per minute, as stated above) was placed in service in 1996. Well #2A was rehabilitated in 2017.

Elton Road Well #1B replaced Well #1A in 2017, Well #2A was re-surged to increase yield.

Water from Elton Wells #1B and #2A are blended together prior to entering the distribution system.

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As required by the Connecticut State Department of Health, the Berlin Water Control Commission has to have three (3) tradesmen classified as Treatment Operators Class I and one (1) tradesman classified as Class II. The Water Control Commission has three (3) tradesmen classified as Distribution Operators-Class I, and one (1) tradesman classified as Class II.

Monthly testing of the water supplied by the Berlin Water Control Commission has shown that the water has met, or exceeded, every standard set by the State and Federal Agencies for quality and safety.

The following definitions and tables summarize the analytical results of water samples taken from various locations within the distribution system:

Definitions:
Maximum Contaminant Level Goal or 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 Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Maximum residual disinfectant level goal or 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 contaminants.
Maximum residual disinfectant level or 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.
Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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Table I includes all of the REGULATED contaminants that were detected during the 2023 sampling season (or the last required testing/reporting calendar year period for some parameters). Although all were well below Maximum Contaminant Levels (MCLs), the following lists their significance and possible reasons:

Chlorides are an indicator of sewage pollution if found in concentrations higher than normal for the area. Normal chloride concentrations vary with distance from bodies of salt water.

Haloacetic Acids (HAA5s) are formed as a result of chlorine, used in the disinfection process, reacting with natural occurring organic acids. *Levels well above the MCL (Maximum Contaminant Level) may cause cancer.*

Nitrate Nitrogen can enter potable water as runoff from fertilizers or, as in most cases, from erosion of natural deposits. *High concentrations, in excess of 10 parts per million (ppm) may cause a condition know as Methemoglobinemia when given to very young infants. It can also be transmitted to infants by nursing mothers who have consumed the water.*

Trichloroethene (TCE): *Some people who drink water containing Trichloroethylene in excess of the Maximum Contaminant Level (MCL) over many years could experience problems with their liver, and may have an increased risk of getting cancer.*

Sodium: Persons with high blood pressure, hypertension, congestive heart disease or persons on a low salt diet should consult their physician before consuming a drinking water source with a high sodium level.

Total Organic Carbon is a measure of the natural organic matter in potable water. It is used as a general measure of water quality and has no specific health concerns.

Cyanide: Excessive levels of cyanide can cause nerve and thyroid damage. It may be found in the discharges of various manufacturing operations.

Barium: Excessive levels of Barium could cause increases in blood pressure. Barium is found naturally in the environment and may also be found in the discharge of drilling wastes and metal finishing.

Fluoride, in low levels, has been shown to help prevent tooth decay. The Center for Disease Control (CDC) has a recommended optimal level of 0.7 mg/L while the EPA's recommended upper limit for fluoride in drinking water is 2.0 mg/L. Excessive fluoride may lead to increased bone brittleness later in life. The levels found in testing conducted in 2022 (0.7 mg/L) were within the optimal level.

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Trihalomethanes (TTHMs) are those compounds created by the chlorination of drinking water by the reaction of the chlorine or organic matter. A Maximum Contaminant Level (MCL) of 80 milligrams per liter (mg/L) has been established. 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 system, or may have an increased risk of getting cancer.

Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of water quality. High turbidity levels can also hinder the effectiveness of disinfection.

Net Gross Alpha Emitters: There are small amounts of naturally occurring radioactivity present in the environment. Long term exposure to levels well above the maximum contaminant level may cause cancer and cognitive problems.

Copper: Samples were collected from the Berlin Water Control Commission in 2021. ***Table II*** of this report summarizes the results of lead and copper testing conducted in 2021. During this round of sampling, none of the twenty-nine homes sampled were above the action levels set by the EPA. The EPA requires 90% of samples taken in a sampling period fall below the action levels, therefore, the Berlin Water Control Commission remains in compliance with the Lead and Copper Rule.
Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some individuals who may drink water containing elevated copper in excess of the action level over may years could suffer liver or kidney damage. People with Wilson's disease should consult their personal health provider. During the lead and copper monitoring period conducted in 2021, there were no exceedances of the copper action level in any of the first draw samples collected by the homeowners.

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 Berlin Water Control Commission 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 in the residential plumbing 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 or at http://epa.gov/safewater/lead.

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Another simple way to reduce the possible exposure to lead is to regularly clean your faucet screens to remove material that may become trapped in the screen. Some of that material may be lead particles from your home's internal plumbing. Finally, do not use hot water from the tap to make infant formula or for cooking. Hot water may have higher mineral content than the cold water supplied by the Berlin Water Control Commission.

Infants and young children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink water containing lead in excess of the action level over many years can develop kidney problems or high blood pressure. Infants and young children are typically more vulnerable to lead in drinking water than the general population. While the Berlin Water Control Commission uses no lead pipes in its distribution system, it is possible that lead levels may be elevated in your home, which is a result of materials used in your home's plumbing.

In 2024, Berlin Water Control will be conducting a State/Federal Government Survey of water infrastructure, with the emphasis of eliminating lead services and exposure to lead, in general. There will be additional lead and copper testing in the summer of 2024.

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 resulting from urban stormwater runoff, 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 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 stormwater 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, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and

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Drug Administration (FDA) 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 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 (800-426-7491).

However, 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).

WATER CONSERVATION:

Water is our most valuable natural resource. It is essential for life as we know it. Although we in the Northeast have been blessed with, at least until now, what appears to be an unlimited supply of pure, safe drinking water, the preservation of this valuable resource is the responsibility of all.

Following are just a few of the many steps that we can all take to prevent the waste and, perhaps loss, of this most valuable gift:

1. Detect and repair leaky faucets and toilets.
2. Install water-efficient showers and dish-and/or-clothes washers
3. Limit the time spent in showering.
4. Detect and repair leaky faucets and toilets.
5. Install water-efficient showers and dish-and/or-clothes washers
6. Limit the time spent in showering.
7. Water lawns and gardens only when needed, and then only early (or late) in the day to prevent water loss by evaporation during the hot period of the day. Add mulch when possible to prevent evaporation.

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8. Wash automobiles only when absolutely necessary.

9. Do not leave water running when shampooing or brushing one's teeth.

If we all take these steps as well as any others that you may think of, we will be able to assure ourselves and future generations of a safe, potable drinking water supply for many years to come.

Continuous monitoring is also being carried out to provide further protection for our consumers.

The Berlin Water Control Commission is proud to offer this report to its customers; and to report that all of the State and Federal requirements for Public Water have not only met but, in most cases, exceeded every standard set by the State and Federal Agencies for quality and safety.

Please Note: The State of Connecticut Department of Public Health has performed an assessment of our drinking water sources. The completed assessment report is available for access on the Drinking Water Division's web site: *www.dph.state.ct.us/BRS/Water/DWD.btm*

If you have any questions concerning the Berlin Water Control Commission and the water that it supplies, please contact Ray Jarema of the Berlin Water Control Commission in Berlin, at (860) 828-7065. He will be most happy to answer any questions that you may have, or supply you with any additional information you may need.

Ray Jarema

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T A B L E I

REGULATED COMPONENTS

Regulated Component	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal *(MCLG)*	Test Results	
			Range	Average
Coliform Bacteria (2023)	<5% Positive; no more than 1 Positive per Month	*0 per 100 mL*	**Absent to Absent**	**Absent**
Chlorine Residual (2023)	4.0 mg/L	-----	**0.69 to 1.07**	**1.07 mg/L**
Chloride (2020)	250 mg/L	*250 mg/L*	**NA**	**23.00 mg/L**
Nitrate (2023)	10 mg/L	*10 mg/L*	**0.049 mg/L**	**0.049 mg/L**
pH (2023)	6.4 to 10	*6.4 to 10*	**9.2 to 9.7**	**9.7**
Sodium (2020)	---	*28 mg/L**	**NA**	**15 mg/L**
Barium (2023)	2 mg/L	*2 mg/L*	**NA**	**0.02 mg/L**
Cyanide (2022)	0.2 mg/L	*0.2 mg/L*	**Not Detected-ND**	**ND**
Fluoride (2023)	4 mg/L	*2 mg/L*	**0.0 – 0.73 mg/L**	**0.75 mg/L**
Turbidity (2023)	5 NTU	*5 NTU*	**0.02 to 0.12**	**0.12 NTU**
Manganese (2019)	0.05 mg/L	*0.05 mg/L*	**0.001 – 0.020**	**0.020**
Total Organic Carbon (2023)	---	*4.0 mg/L***	**1.2– 1.52 mg/L**	**1.52**
Trichloroethene (2023)	0.005 mg/L	*0.000 mg/L*	**<0.0005 to 0.0013 mg/L**	**<0.0005 mg/L Blended Result**
Haloacetic Acids HAA5s *(Disinfection By-Products)* **(2023)**	0.06 mg/L	*0.000 mg/L*	**<0.004 to 0.017 mg/L**	**0.017 mg/L**
Total Trihalomethanes (TTHMs) (2023)	0.080 mg/L	*0.0000 mg/L*	**0.011 to 0.085 mg/L**	**0.085 mg/L**

* = *Notification Level*

** = *Recommended Limit, No official limits recognized by EPA*

Abbreviations Used in This Chart:

< = Less Than mg/L = milligrams per liter NTU = Nephelometric Turbidity Units pCi/L = picocuries per liter

Source of Data: Northeast Laboratories, Inc. and the New Britain Water Department

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T A B L E I I

LEAD & COPPER TEST RESULTS

MONITORING PERIOD:	**3RD QUARTER = 2021** *(= latest required multiple sites sampling period)*
SAMPLE SOURCE:	**DRINKING WATER: 29 TAP SOURCES (minimum 20)**
COLLECTION DATE:	**SEPTEMBER 2021**

Analyte	**Lead**	**Copper**
Sample Year	2021	2021
Unit	ppb*	ppm**
MCL	AL=15	AL=1.3
MGLG	0	1.3
Range of Detection (low to high)	non-detect to 6.5 ppb	non-detect to 0.02 ppm
90th Percentile Value	2.1	<0.02
Met Drinking Water Standards	yes***	yes
Typical Source	Corrosion of household plumbing system	Corrosion of household plumbing system

Note: *Lead is reported in Parts Per Billion - Action Level = 15 ppb
**Copper is reported in Parts Per Million - Action Level = 1.3 ppm
***zero samples greater than action level

Summary:	**Lead:**	**90th Percentile =**	**0.0021**	**mg/L**	*(Action Level-0.015)*
	Copper	**90th Percentile =**	**<0.02**	**mg/L**	*(Action Level 1.3)*

COMMENTS: DURING THE ABOVE NOTED CALENDAR YEAR 2021 (LATEST REQUIRED MULTIPLE SITES TESTING PERIOD), THE 90TH PERCENTILE LEAD AND COPPER RESULTS WERE WELL BELOW THE ACTION LEVELS.

Abbreviations Used in This Chart: < = Less Than ND = None Detected ppm=parts per million ppb=parts per billion