



# 2024 Annual Water Quality Report

Report Covering: January 1, 2024 – December 31, 2024

## SUMMARY

In 2024 the Kennebec Water District (KWD) produced just over **1.5 billion gallons** of clean, safe drinking water for more than 8,800 customers in the greater Waterville area.

## INTRODUCTION

KWD, the first water district in the United States, was chartered by the State of Maine Legislature in 1899. KWD serves customers in Waterville, Winslow, Fairfield, Vassalboro, and Benton and is a wholesale supplier of water to the Town of Oakland. KWD's water transmission and distribution systems include over 171 miles of water mains and provides fire protection service through 644 public hydrants. KWD is governed by a 10-member elected Board of Trustees. The trustees and employees are dedicated to reliably supplying safe drinking water to more than 8,800 customers every day.

## WATER SUPPLY / SOURCE INFORMATION

The sources of drinking water include rivers, lakes, ponds, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human or animal activity. The Maine Drinking Water Program (DWP) has evaluated all public water supplies as part of the Source Water Assessment Program (SWAP). The assessments included geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely our drinking water source is to being contaminated by human activities in the future. The KWD Source Water Assessment is available for public viewing on our website and at the local town offices. For more information about the SWAP, please contact the DWP at (207) 287-2070 or [www.medwp.com](http://www.medwp.com).

China Lake has served as KWD's primary source of water since 1905. China Lake's watershed is located within the towns of China, Vassalboro, Albion, and Winslow and drains approximately 27 square miles of the surrounding landscape. An estimated 32 billion gallons of water is stored within China Lake, and it has a surface area of approximately 6.2 square miles.

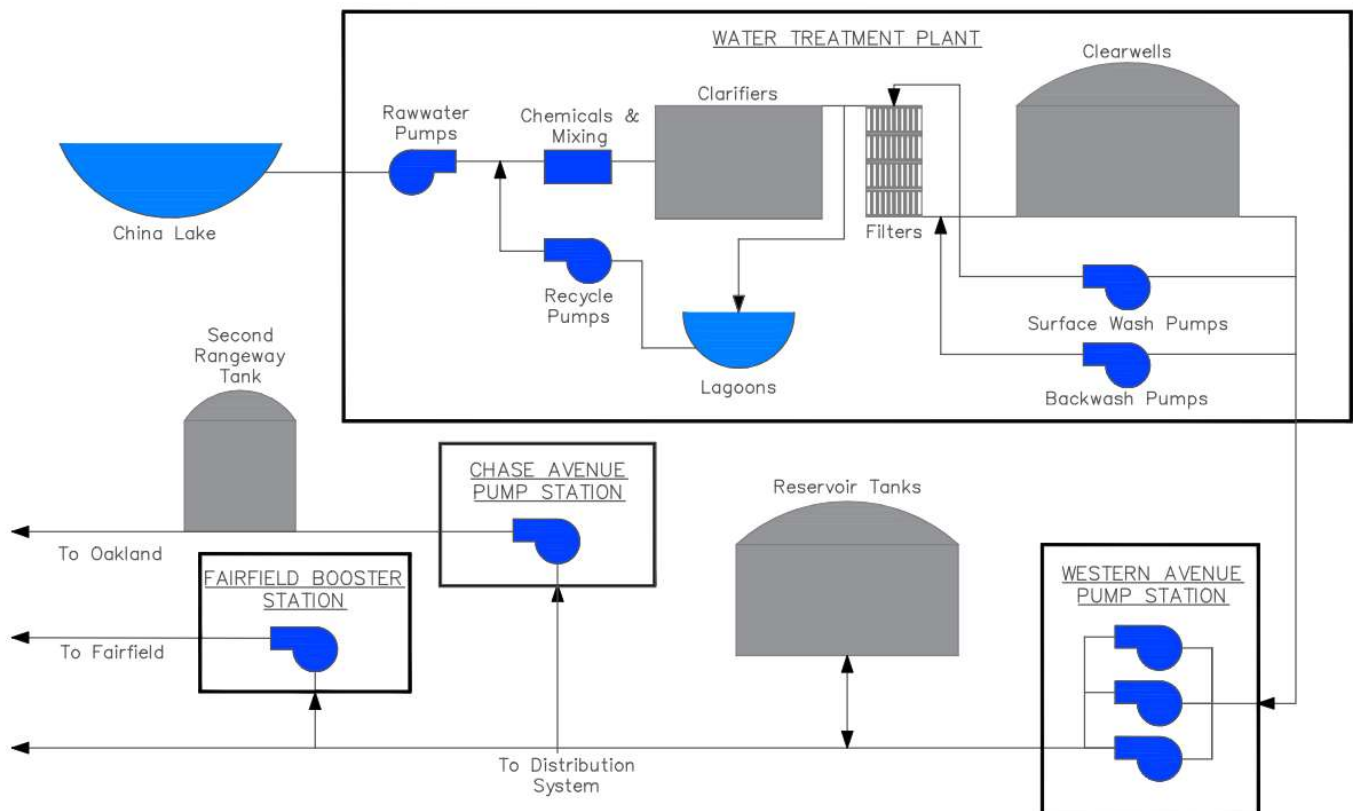
As a surface water body, China Lake is susceptible to pollution and contamination from human activities and natural sources within the watershed. In the early 1900's, KWD purchased nearly all the shoreline around the West Basin (visible as you pass through the village area of East Vassalboro) to protect the water quality in China Lake. KWD also planted thousands of trees to reduce the risk of soil erosion entering the lake.

The East Basin shoreline (from China Village area south to the South China Village area) is mostly privately owned. Consequently, hundreds of homes and camps, along with miles of roadways, have been developed within close proximity of the shoreline. Land development is a significant source of nutrient pollution, which leads to algal blooms and other water quality issues. KWD partners with the towns of China and Vassalboro, the China Region Lakes Alliance, the China Lake Association to improve China Lake water quality.

## WATER TREATMENT AND FILTRATION INFORMATION

KWD operates one water treatment plant which is located at 462 Main St in Vassalboro and was constructed in 1993 to meet the requirements of the Federal Safe Drinking Water Act.

The water treatment plant draws its source water directly from the West Basin of China Lake. This water is piped into the treatment plant by gravity then pumped through the treatment process. A coagulant and coagulant aid is added to the water to cause particles in the source water to clump together. This pre-treated water is then passed through one of three Microfloc upflow clarifiers and one of six mixed media (granular activated carbon & sand), rapid rate filters to remove the particles that are now clumped together. Chlorine (sodium hypochlorite) is then added as the now filtered water flows into one of the two 1-million-gallon clearwells located onsite. As the water pass through the water treatment plant for a last time and it enters the distribution system, sodium hydroxide is added to control the pH, Ortho-polyphosphate is added to corrosion control, and fluoride is added to promote dental health. The finished water flows via gravity to the Western Avenue Pump Station in Waterville where it is then piped to the homes and businesses in the greater Waterville area.



## OTHER IMPORTANT INFORMATION

KWD is governed by a 10-member elected board. Each member is elected for a three-year term from one of the five municipalities served by KWD.

**Kennebec Water District Board of Trustees (2024)**

<b>Name (Position)</b>	<b>Municipality</b>
Frank Richards (President)	Vassalboro
Ben Murray (Vice President)	Winslow
Jeff Earickson (Treasurer)	Waterville
J. Michael Talbot (Assistant Treasurer)	Waterville
Sarah Whateley (Clerk)	Waterville
Amy Stabins	Winslow
Denise Bruesewitz	Waterville
Bruce Williams	Fairfield
Mark McCluskey	Fairfield
Allan Fuller	Benton

Board of Trustee meetings are generally held on the first and third Thursday of each month at 7:30 a.m. at 131 Drummond Ave. in Waterville. Virtual attendance of these meetings is generally available upon request. These meetings are open to the public.

## HEALTH INFORMATION

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. 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 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 runoff, and septic systems.

**Radioactive Contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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.

US Environmental Protection Agency (EPA) and US Centers for Disease Control and Prevention (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 (1-800-426-4791) or at the following link: <https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information>

Fluoride in Drinking Water: As requested by the voters in the municipalities served by KWD, fluoride is added to the water. The CDC states that a proper amount of fluoride from infancy through old age helps prevent or reduce tooth decay.

Parents with infant children should be aware that most infant formula contains low levels of fluoride. Regularly mixing powdered or liquid infant formula concentrate with fluoridated water may increase the chance of a child developing the faint white markings of mild fluorosis on their teeth. The risk is reduced by using low fluoride water for formula all or most of the time. For more information visit the CDC's website at: [https://www.cdc.gov/fluoridation/faq/?CDC\\_AAref\\_Val=https://www.cdc.gov/fluoridation/faqs/infant-formula.html](https://www.cdc.gov/fluoridation/faq/?CDC_AAref_Val=https://www.cdc.gov/fluoridation/faqs/infant-formula.html)

Lead and Copper in Drinking Water: 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. KWD is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact KWD. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at: <http://www.epa.gov/safewater/lead>

KWD completed a Service Line Inventory as required by the Revised Lead and Copper Rule. It is publicly accessible at: <http://www.kennebecwater.org/SLI>

PFAS in Drinking Water: Per and Poly Fluoroalkyl Substances (PFAS) are a class of thousands of man-made chemicals that have been manufactured and used in a wide range of commercial manufacturing settings and consumer products since the 1940s. According to the US Environmental Protection Agency (EPA), these chemicals are very persistent in the environment and in the human body – meaning they do not break down and they can accumulate over time. PFAS exposure over a long period of time can cause cancer and other serious illnesses that decrease quality of life or result in death. PFAS exposure during critical life stages such as pregnancy or early childhood can also result in adverse health impacts.

PFAS may be found in drinking water sources due to land application of wastewater or industrial sludges, discharges from wastewater treatment plants and septic systems, use of firefighting foam, and intentional or unintentional spills. PFAS in drinking water is always the result of human activity and contamination.

For more information visit: <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>

## DEFINITIONS

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

**Entry Point (EP):** Where the finished water entered the distribution system.

**Locational Running Annual Average (LRAA):** A 12 month rolling average of all monthly or quarterly samples at specific sampling locations. Calculation of the RAA may contain data from the previous year.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health.

**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 contaminants.

**Running Annual Average (RAA):** A 12 month rolling average of all monthly or quarterly samples at all locations. Calculation of the RAA may contain data from the previous year.

**Secondary Maximum Contaminant Level (SMCL):** Non-mandatory water quality standards.

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

**ppm:** parts per million or Milligrams per liter (mg/L)

**ppb:** parts per billion or micrograms per liter (µg/L)

**ppt:** parts per trillion or nanograms per liter (ng/L)

**pCi/L:** picocuries per liter (a measure of radioactivity).

**pos:** Positive Sample

**MFL:** million fibers per liter

## VIOLATIONS

KWD had no violations in 2024.

## WAIVER INFORMATION

KWD had no waivers in 2024.

# Water Quality Test Results

## PRIMARY STANDARDS

### Regulated Standards for Finished Water

Parameter	MCLG Goal	MCL Highest Allowed	Results	Date Sampled	Source
MICROBIOLOGICAL					
Coliform Bacteria (TCR) <sup>9</sup>	0	5% of monthly samples are positive	0 pos	2024	Naturally present in the environment
ORGANIC COMPOUNDS					
Total Trihalomethanes (ppb) <sup>10</sup> Distance Racing Products Hampton Inn Keystone Property Mgt. KSW Federal Credit	0	80	Average: 39 (Range: 38 - 42) LRAA: 47 (Range: 43.1 – 52.7) LRAA: 35 (Range: 25.5 - 43) LRAA: 37 (Range: 26.6 – 52.5) LRAA: 36 (Range: 26.4 – 43.9)	2024	By-product of drinking water chlorination
Haloacetic Acids (ppb) <sup>10</sup> Distance Racing Products Hampton Inn Keystone Property Mgt. KSW Federal Credit	0	60	Average: 28 (Range: 20 - 30) LRAA: 20 (Range: 6.1 – 28.5) LRAA: 28 (Range: 20.7 – 36.3) LRAA: 31 (Range: 22.8 - 36) LRAA: 30 (Range: 22.3 – 40.1)	2024	By-product of drinking water chlorination
INORGANIC CHEMICALS					
Chlorine Residual (ppm)	4	4	EP: 1.07 (Range: 0.74 - 1.28)	2024	Water additive used to control microbes
Copper 90 <sup>th</sup> % Value (ppm) <sup>5</sup>	1.3	AL=1.3	0.31 (Range: 0.0472 - 0.55) 0 sites exceeded AL	1/1/2022-12/31/2024	Corrosion of household plumbing systems
Fluoride (ppm) <sup>3</sup>	4	4	0.82	5/22/2024	Water additive which promotes strong teeth
Lead 90 <sup>th</sup> % Value (ppb) <sup>5</sup>	0	AL=15	1.87 (Range: 0) 0 sites exceeded AL	1/1/2022-12/31/2024	Corrosion of household plumbing systems Complete Lead tap data available upon request
Turbidity (NTU) <sup>11</sup>	None	5	Highest Monthly Average: 0.09 Highest Single Value: 0.52 Lowest % <MCL: 99.99%	2024 January 2024 January 2024	Soil runoff
RADIONUCLIDES					
Combined Radium (-226 & 228) (pCi/l)	0	5	1.7	10/22/2020	Erosion of natural deposits
Combined Uranium (ppb)	0	30	0.012	5/22/2024	Erosion of natural deposits
Radium-226 (pCi/l)	0	5	0.85	10/22/2020	Erosion of natural deposits
Radium-228 (pCi/l)	0	5	0.85	10/22/2020	Erosion of natural deposits
SYNTHETICS					
Total PFAS (6 Regulated) (ppt) <sup>7</sup>	0	20	7.1	5/8/2024	Man-made chemicals in a wide variety of consumer products and industrial applications. Stain- and water-resistant fabrics, carpeting, nonstick cookware, cleaning products and paints, Class B Firefighting foam (AFFF) foam and industrial processes.
OTHER					
ALL OTHER REGULATED DRINKING WATER CONTAMINANTS WERE BELOW DETECTABLE LEVELS					

## SECONDARY STANDARDS

### Non-regulated Aesthetic Standards for Finished Water

Parameter	Secondary Maximum Contaminant Level	KWD Test Results	Date Sampled
Chloride (ppm)	250	19	5/22/2024
Magnesium (ppm)	No Standard	1.2	5/22/2024
Manganese (ppm)	0.05	0.00238	5/22/2024
Sodium (ppm)	No Standard	12	5/22/2024
Sulfate (ppm)	250	11	5/22/2024

## ADDITIONAL PFAS SAMPLING

### PFAS Compounds in Finished Water

Parameter	Proposed Maximum Contaminant Level	Highest KWD Test Result	Date Sampled
PFBS (ppt) <sup>12</sup>	2000 ppt	0.5292	8/27/2024
PFHpA (ppt)	N/A	3.95	9/12/2024
PFHxA (ppt)	N/A	2.31	10/23/2024
PFNA (ppt) <sup>12</sup>	10 ppt	1.27	8/27/2024
PFOA (ppt)	4.0 ppt	4.59	8/27/2024
PFOS (ppt) <sup>12</sup>	4.0 ppt	1.49	8/27/2024

Testing was completed for twelve other PFAS compounds, but none were detected in the finished water.

**1) Arsenic:** While your drinking water may meet EPA's standard for Arsenic, if it contains between 5 to 10 ppb you should know that the standard balances the current understanding of arsenic's possible health effects against the costs of removing it from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. Quarterly compliance is based on running annual average.

**2) E. coli:** E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

**3) Fluoride:** For those systems that fluoridate, fluoride levels must be maintained between 0.5 to 1.2 ppm. The optimum level is 0.7 ppm.

**4) Gross Alpha:** Action level over 5 pCi/L requires testing for Radium 226 and 228. Action level over 15 pCi/L requires testing for Uranium. Compliance is based on Gross Alpha results minus Uranium results = Net Gross Alpha.

**5) Lead/Copper:** Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.

**6) 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 advice from your health provider.

**7) PFAS:** The degree of risk depends on the level of chemicals and duration of exposure. Laboratory studies of animals exposed to high doses of PFAS have shown numerous negative effects such as issues with reproduction, growth and development, thyroid function, immune system, neurology, as well as injury to the liver. Research is still relatively new, and more needs to be done to fully assess exposure effects on the human body.

**8) Radon:** The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4000 pCi/L, effective 1/1/07. If Radon exceeds the MEG in water, treatment is recommended. It is also advisable to test indoor air for Radon.

**9) Total Coliform Bacteria:** Reported as the highest monthly number of positive samples, for water systems that take less than 40 samples per month.

**10) TTHM/HAA5:** Total Trihalomethanes and Haloacetic Acids (TTHM and HAA5) are formed as a by-product of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water. Compliance is based on LRAA.

**11) Turbidity:** Turbidity 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.

**12) Estimated Value:** The samples results are below the reporting limit (2ppt) for the testing method resulting in lower-than-normal reliability and accuracy.



Please share this information with all other people who drink this water, especially those who may not have received this report directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this report in a public place or distributing this notice by hand or mail.

If you have any questions about this report or your water quality, or service, please call KWD's office at (207) 872-2763 during normal business hours (Monday through Friday 8:30 a.m. until 4:30 p.m.). Questions may also be directed to the Maine Department of Health and Human Services Drinking Water Program at (207) 287-2070 or [www.medwp.com](http://www.medwp.com) or to the US EPA Safe Drinking Water Hotline at 1-800-426-4791 or online at: <https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information>



**ADMINISTRATION AND OPERATIONS FACILITIES**

131 Drummond Ave., Waterville ME 04901 | 207.872.2763



**WATER TREATMENT PLANT**

462 Main St., (Route 32), Vassalboro ME 04989

**Email:** [Info@kennebecwater.org](mailto:Info@kennebecwater.org)

**Website:** <http://www.kennebecwater.org>