



KENNEBEC WATER DISTRICT
Public Water System ID ME0090750

INTRODUCTION

The Kennebec Water District (KWD) has been in existence since 1899. KWD presently serves the municipalities of Waterville, Winslow, Fairfield, Vassalboro, and Benton and supplies water for the town of Oakland. KWD has a regular testing and reporting program, and this Consumer Confidence Report (CCR) is one way of communicating those test results. The CCR is intended to provide you, the KWD customer, with important information about your drinking water. KWD's trustees and employees want you to know that you can count on us for a safe and reliable supply of water every day, and we are dedicated to providing the highest quality service to you.

WATER QUALITY

KWD ensures that your water is safe through regular monitoring of both its source and treated water. Testing is conducted in KWD's own laboratory as well as in independent, state-certified laboratories. This CCR is a comprehensive summary of the laboratory test results. KWD employs a professional staff of water treatment operators, licensed by the State of Maine Department of Health and Human Services, to maintain water quality within required parameters.

The Safe Drinking Water Act directs the United States Environmental Protection Agency (EPA) to establish and enforce minimum drinking water standards. These standards set limits on certain biological, organic, inorganic, and radioactive substances potentially found in water supplies. Two levels of standards have been established. Primary drinking water standards set achievable levels and goals for drinking water quality to protect your health. Secondary drinking water standards provide guidelines regarding the taste, odor, color, and other aesthetic aspects of your drinking water which do not present a health risk. The 2016 testing results indicate that the Kennebec Water District's water continuously meets or exceeds all state and federal requirements.

The presence of contaminants does not necessarily indicate that water poses a health risk. However, some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 infection. These people should seek advice about drinking water from their health care providers.

EPA and 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 from the Kennebec Water District office.

Fluoride in Drinking Water: KWD adds fluoride to its water in an amount to meet the EPA's recommended dosage level of 0.7 ppm.

The Center for Disease Control (CDC) states that a proper amount of fluoride from infancy through old age helps prevent and control tooth decay. Parents, however, should be aware that a recent study raised the possibility that fluoride exposure during the first year of life may play a role in the development of enamel

fluorosis (cosmetic changes to the outer surface of the tooth). When fluoridated water is used consistently as a mixer for formula as the primary source of nutrition over long periods of the first year, a child may receive enough fluoride to increase his/her chances of developing very mild to mild fluorosis. This potential can be lessened by using low fluoride water for formula all or most of the time. For more advice:

http://www.cdc.gov/fluoridation/safety/infant_formula.htm .

Lead in Drinking Water: 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. KWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in household 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 and 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>.

Pharmaceuticals in Drinking Water: Recent media attention has focused on the presence of trace amounts of pharmaceutical and personal care products that have been detected in some water sources. Some minute amounts of these products may pass through animals and humans or disposal systems and eventually enter groundwater or surface waters. Even in locations showing some presence, the levels found are extremely low concentrations – millions of times lower than a therapeutic dose. Testing for the products is not yet required by EPA. KWD will continue to proactively test China Lake water and its finished water for such products. There are several online resources that explore the occurrence and impacts of PPCP in drinking water. One site is:

http://www.waterrf.org/resources/Lists/ProjectPapers/Attachments/62/4457_BackgroundInfo_MedicinesPersonalCare.pdf

WATER SUPPLY / SOURCE INFORMATION

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 its 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 each drinking water source is to being contaminated by human activities in the future. The KWD Source Water Assessment is available for public viewing at the Kennebec Water District office. For more information about the SWAP, please contact the DWP at telephone 287-2070.

China Lake has served as KWD's primary source of water since 1905. China Lake has 6.1 square miles of surface area within 32 square miles of watershed. The estimated capacity of the lake is 31 billion gallons. KWD demand averages approximately 980 million gallons annually. As a surface water body, China Lake is susceptible to pollution and contamination from both human and natural sources. Early in its existence, to help protect the water quality within China Lake, the Kennebec Water District acquired nearly all of the shoreline around the West Basin of the lake, planting thousands of trees to protect against the impacts of runoff. The East Basin shoreline is mostly privately owned. Protection of the watershed presently is a combined effort of the towns of China and Vassalboro, the China Region Lakes Alliance, the China Lake Association and the Kennebec Water District. A common goal of these organizations is to improve China Lake water quality.

Because the variable water quality from China Lake includes frequent algae blooms during the summer and fall, the KWD water treatment facility uses many modern processes to effectively improve the quality of the water before we deliver it to your tap. These processes include coagulation, filtration, disinfection, pH adjustment and corrosion control. Coagulation is used to remove particles from the raw water in three Microfloc upflow clarifiers. The water is then filtered and polished in six granular activated carbon filters. Chlorine is added as a disinfectant. Chlorine levels are continuously monitored to ensure adequate and appropriate disinfection has occurred prior to delivery to consumers. As a dental health aid, fluoride is also combined with the finished water. Adding a corrosion inhibitor and raising the pH of the water provides corrosion protection for KWD's distribution piping system and your household plumbing. This treatment practice has been so effective in reducing lead and copper levels in the water that our required annual monitoring program has been extended to a three year cycle.

WATER SYSTEM DATA

KWD's water transmission and distribution systems include over 171 miles of water mains. The system serves over 8600 customers in six communities and provides fire protection service through 634 public hydrants. In 2016, KWD produced over 961,620,000 gallons of water at its water treatment facility, a daily average of 2,680,000 gallons. KWD can store 14.9 million gallons in its 5 active water tanks. That storage permits KWD to meet normal and peak system demands and to maintain an adequate supply for firefighting requirements.

HIGHLIGHTS OF THE PAST YEAR

A total of 2933 feet of water main was replaced or added to the KWD system in 2016, primarily in Waterville and Winslow. As 2016 featured mild winter weather, KWD had to complete only 24 emergency repairs on water mains, services and hydrants. KWD staff also installed 638 composite meters throughout the year, in many cases replacing older mechanical meters. The KWD billing office gathered, recorded and billed over 35,000 meter readings. Water treatment plant staff collected over 600 water samples, analyzing most in our state certified laboratory.

In 2016, KWD continued to address replacements and upgrades to its aging infrastructure. The primary KWD project is a \$3.3 million upgrade to KWD's primary pump station, the Western Avenue Pump Station. This project will extend through 2017 and will add efficiency and reliability to the KWD system. KWD also reconstructed and upgraded its intake facility in 2016. KWD also purchased a property that abuts its South Street complex with plans to use that parcel to locate an updated garage facility for its construction operations.

At the end of 2016, KWD finalized plans to replace its primary water filter component, the granular activated carbon in its filters. That replacement project will be conducted in early 2017 and should be a primary factor in the production of safe and reliable water quality for many years.

OTHER IMPORTANT INFORMATION

This CCR is only a summary report. If you have any questions about this report, your water quality or your water service, please call the Kennebec Water District's business office at (207) 872-2763 during normal business hours (Monday through Friday between 8:30 a.m. and 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

<http://www.maine.gov/dhhs/eng/water> or to the EPA Safe Drinking Water Hotline at 1-800-426-4791 or online at: <http://www.epa.gov/safewater/dwhealth.html>

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Board of Trustee meetings are scheduled on the first and third Thursday of each month at 7:30 a.m. at our 6 Cool Street office. These meetings offer an opportunity for public participation in decisions that may affect water quality.



KENNEBEC WATER DISTRICT

PO Box 356 | 6 Cool St., Waterville, Maine 04901 | 207.872.2763

WATER TREATMENT FACILITY

462 Main St., (Route 32), Vassalboro, ME 04989 | 207.923.3358

Email: kennebecwater@kennebecwater.org Website: <http://www.kennebecwater.org>

PRIMARY STANDARDS

Regulated Standards for Finished Water

Parameter	Maximum Contaminant Level <u>Goal</u>	Maximum Contaminant Level	KWD Test Results	Source
CLARITY – 2016 Finished Water (a) (e)				
Turbidity (NTU)	0.10	5.0	0.11 (max = 0.23)	Soil runoff
MICROBIOLOGICAL – 2016 Finished Water (b)				
Total Coliform Bacteria (%)	0	5	0 positive	Naturally present in the environment
DISINFECTION BYPRODUCTS – 2016 Finished Water				
Total Trihalomethanes (ppb) (d)	0	80	Highest Avg = 41 (Range 18.7-57.2)	By-product of drinking water chlorination
Haloacetic Acids (ppb) (d)	0	60	Highest Avg = 22 (Range 3.5 – 25)	By-product of drinking water chlorination
INORGANIC CHEMICALS – 2016 TE6 (c)				
Antimony (ppb)	6.0	6.0	< 0.50	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	0.0	10.0	< 1.00	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes
Barium (ppm)	2.0	2.0	0.0022	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb)	4.0	4.0	< 0.50	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	5.0	5.0	< 0.50	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	100	100	< 0.0005	Discharge from steel and pulp mills; erosion of natural deposits
Copper (ppm)	1.3	Action Level = 1.3	0.00050	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride (ppm) (a)	4.0	4.0	0.65 (Range 0 – 0.85)	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Lead (ppb)	0	Action Level = 15	< 0.5	Corrosion of household plumbing systems; erosion of natural deposits
Mercury (ppb)	2.0	2.0	< 0.05	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands
Nitrate as Nitrogen (ppm)	10.0	10.0	< 0.05	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Nitrite as Nitrogen (ppm)	1.0	1.0	< 0.05	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits

Selenium (ppb)	50.0	50.0	< 0.001	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines
Thallium (ppb)	0.5	2.0	< 0.0005	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Uranium (ppb)	0	30	< 0.5	Erosion of natural deposits
LEAD AND COPPER RULE RESULTS - 2015 LCR (i)				
Copper (ppm) (i)	1.3	Action Level = 1.3	0.43	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (i)	0	Action Level = 15	3.4	Corrosion of household plumbing systems; erosion of natural deposits
RADIONUCLIDES – 2011 (c) (f)				
Radium 228 (pCi/L)	0.0	15	0.609	Erosion of natural deposits

SECONDARY STANDARDS

Non-regulated Aesthetic Standards for Finished Water

Parameter	Secondary Maximum Contaminant Level	KWD Test Results	KWD Test Results Range	Noticeable Effects Above the Secondary Maximum Contaminant Level
CHEMICAL PARAMETERS – 2016 TE6 (e)				
Chloride (ppm)	250	11	-	Salty taste
Color (color units)	15	< 5	-	Visible tint
Copper (ppm)	1.0	0.0005	-	Metallic taste; blue-green staining
Fluoride (ppm) (h)	2.0	0.65	0 to 0.85	Tooth discoloration
Iron (ppm)	0.30	< 0.05	-	Rusty color; sediment; metallic taste; reddish or orange staining
Magnesium (ppm)	No Standard	1.2	-	-
Manganese (ppm)	0.05	0.0074	-	Black to brown color; black staining; bitter metallic taste
Silver (ppm)	0.1	< 0.0005	-	Skin discoloration; graying of the white part of the eye
Sodium (ppm)	No Standard	8.5	-	-
Sulfate (ppm)	250	12	-	Salty taste
Total Dissolved Solids (ppm)	500	No Test	-	Hardness; deposits; colored water; staining; salty taste
Zinc (ppm)	5	No Test	-	Metallic taste

ADDITIONAL PARAMETERS – 2016 (e) (g)				
Alkalinity as CaCO ₃ (ppm)	No Standard	24.3	23 to 26	-
Calcium (ppm)	No Standard	8.6	-	-
Hardness as CaCO ₃ (ppm)	No Standard	26.6	-	-
Free Chlorine Residual (ppm)	No Standard	1.25	0.68 to 1.68	-
Total Chlorine Residual (ppm)	No Standard	1.46	0.78 to 1.93	-
Orthophosphate (ppm)	No Standard	0.54	-	-
pH	6.5 to 8.5	7.0	6.68 to 7.66	Low pH: bitter metallic taste; corrosion High pH: slippery feel; soda taste; deposits
Temperature (Celsius)	No Standard	14.3	5 to 26	-

ALL OTHER REGULATED DRINKING WATER CONTAMINANTS WERE BELOW DETECTABLE LEVELS

DEFINITIONS

Action Level: The concentration of a contaminant that, if exceeded, triggers treatment requirements which a water provider must follow

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.

Nephelometric Turbidity Units (NTU): A measurement of cloudiness or suspended colloidal matter (silt) in the water. Excessive turbidity levels can cause problems with water disinfection. The KWD water filtration system renders the finished drinking water clear and closely matches the EPA MCLG standard for turbidity quality for potable water systems.

Secondary Maximum Contaminant Levels (SMCL): Target for aesthetic quality without posing risk to human health.

ppb: Parts per billion

ppm: Parts per million

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in water in order to meet a standard.

NOTES

- (a) Turbidity and Fluoride are reported as monthly averages from daily samples at the entry to the distribution system.
- (b) Coliform presence reported as a monthly average. No more than 5% of samples in a month shall be coliform positive.
- (c) Samples collected after treatment as required by state monitoring regulations. KWD is not required to test for asbestos.

- (d) TTHM & HAA5 are calculated as a running annual average of quarterly samples taken at the extremities of the distribution system
- (e) Data collected at the entry of the distribution system.
- (f) Results for radionuclides are from the 2011 samples. Regulations require radionuclide monitoring once every nine years.
- (g) KWD annual average test results
- (h) Fluoride has both an MCL and SMCL. The SMCL is based on monthly averages.
- (i) Lead and copper samples taken every three years. Value is a 90th% value of samples taken from 30 sites across the distribution system.

HEALTH INFORMATION

Drinking water, including bottled water, may reasonably be expected to contain at least minute 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: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife, (2) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming, (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses, (4) 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. The KWD treatment processes reduce contaminant levels to within accepted standards.

VIOLATIONS

KWD had no reportable violations for water quality in 2016.

WAIVER INFORMATION

In 2014, our system was granted a 'Synthetic Organics Waiver.' This is a three year exemption from the monitoring/reporting requirements for the following industrial chemical(s): TOXAPHENE/CHLORDANE/PCB, HERBICIDES, CARBAMATE PESTICIDES, SEMIVOLATILE ORGANICS. This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source.

CHANGES FROM PRIOR REQUIREMENTS

None.