



ANNUAL WATER
QUALITY
REPORT
2021

WATER QUALITY BEGINS AT THE SOURCE
Kingsport Water Department

Dear Customer,

The Kingsport City Water Department continually strives to provide its customers the safest drinking water possible. This brochure is a summary of the quality of water provided by the Water Department to its customers last year. It is a report reflecting the department's hard work and dedication to deliver safe and reliable drinking water to you.

Included in this summary is information about where your water comes from, what it contains, and how it compares to standards set forth by the State of Tennessee and the United States Environmental Protection Agency (USEPA).

The Water Department is committed to providing you, our customers, the safest, cleanest drinking water possible. We believe customers who are well informed are our best allies in supporting improvements necessary to maintain high water quality standards.

Kingsport Water Department

13th Year to Receive this Award

The **DIRECTOR'S AWARD** of recognition, issued by the Partnership for Safe Water Program (an association of Water utilities and government), has been awarded to the City of Kingsport's Water Treatment Plant, for its' efforts to achieve excellence in water quality far beyond what is required by federal regulations.



Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted. O hable con alguien que lo entienda.

Photos provided by City staff unless otherwise noted –
Cover photo courtesy of *Calvin Sneed*

We realize that our customers are concerned about the security of their drinking water. We urge the public to report any suspicious activities at any utility facilities, including treatment plants, pumping stations, tanks, fire hydrants, etc. to 246-9111 or 229-9452.

GET CONNECTED & REPORT CONCERNS WITH KINGSPORT'S FREE CITY APP

One of the quickest and easiest ways to report a water leak, pothole or other concern to the City of Kingsport is through the ConnectKingsport app. Just download the free app on the [App Store](#) or [Google Play Store](#) and click the "Report a Concern" link to let us know about any issues in the city.

This app is a citizen-first approach that allows residents to have a direct line of communication to request services and report non-emergency issues such as potholes and graffiti. The app will also be a great source of information on all things Kingsport, with links to the city website, animal services, ongoing events and more.

The ConnectKingsport app uses GPS to recognize your location and gives you a menu of common quality-of-life conditions to select from when submitting a request. The app also allows you to upload pictures or videos to accompany your request. Residents can track the status of reports they or other members of the community have submitted until the issue is resolved.



Sam's Water Tank stores 250,000 gallons of water.

Who Do I Call?

Questions concerning your bill, arranging for water service or re-establishing service?

Call Customer Service at 343-9860

or by visiting <https://www.kingsporttn.gov/city-services/customer-service/application-for-water-service/>

After hours emergency:

246-9111

To report water quality problems, low pressure, a broken water main, water leak in the streets or at the meter:

Call Customer Service at 343-9860 or by downloading the ConnectKingsport app.

Questions or concerns about a potential cross connection?

Contact Jason Starnes at 229-9454.

To report suspicious activity to any water facility, including treatment plants; water storage tank, fire hydrants, etc.

Call 246-9111 or 229-9452.

For more information about the Storm Water Program or to report illegal discharges into the storm drain system:

Call (423) 224-2727.

Questions about this report:

Contact Kirby Walker at 229-9410.

If you are interested in learning more about the Water Department, or participating in the decision making process, contact our Public Relations Office at 229-9413. The Board of Mayor & Aldermen meets on the 1st and 3rd Tuesday of each month at 7:00 p.m. in the Court Room at City Hall. This grants opportunities for the general public to voice opinions and/or concerns about decisions that affect the quality of their drinking water.



Kingsport treats water from the South Fork Holston River – our raw water intake is located approximately one mile below the Patrick Henry Dam and one half mile upstream Kingsport's industrial area.

The location of the intake along with the lake and the dam act as a buffer, providing Kingsport with a consistent high quality source water protected from large swings in quantity and quality.

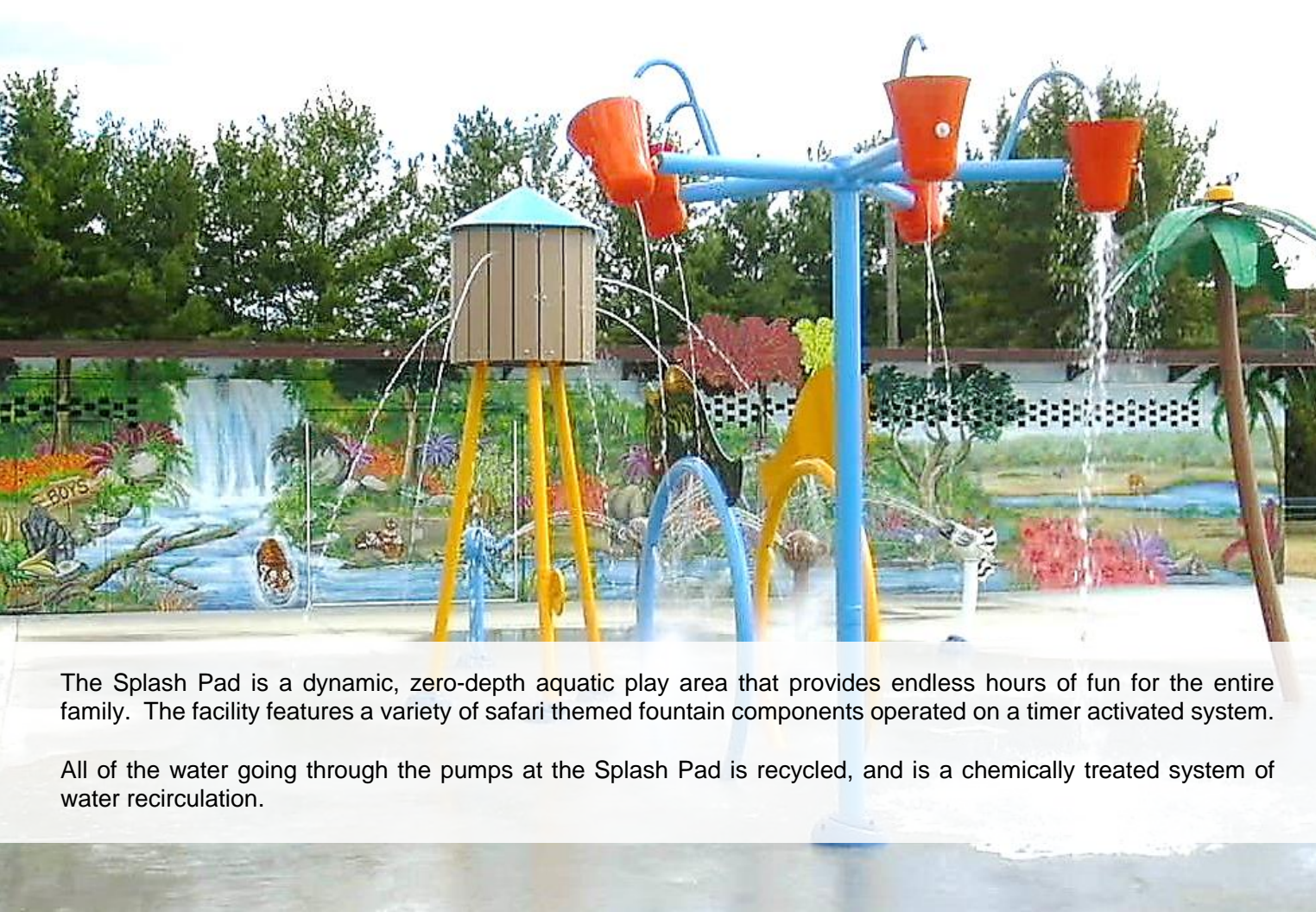
Photo courtesy of Calvin Sneed

Origin

Your water, which is surface water, comes from the South Fork Holston River. Our goal is to protect our water from contaminants and we have worked with the state to determine the vulnerability of our water source to potential contamination. The Tennessee Department of Environment and Conservation (TDEC) has prepared a Source Water Assessment Program (SWAP) Report for the untreated water sources serving this water system. The SWAP Report assesses the susceptibility of untreated water sources to potential contamination. To ensure safe drinking water, all public water systems treat and routinely test their water. Water sources have been rated as reasonably susceptible, moderately susceptible or slightly susceptible based on geologic factors and human activities in the vicinity of the water source. The Kingsport Water System sources rated as reasonably susceptible to potential contamination.

An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings and the overall TDEC report to the EPA can be viewed online or you may contact the Water System to obtain copies of specific assessments.

<https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html>



The Splash Pad is a dynamic, zero-depth aquatic play area that provides endless hours of fun for the entire family. The facility features a variety of safari themed fountain components operated on a timer activated system.

All of the water going through the pumps at the Splash Pad is recycled, and is a chemically treated system of water recirculation.



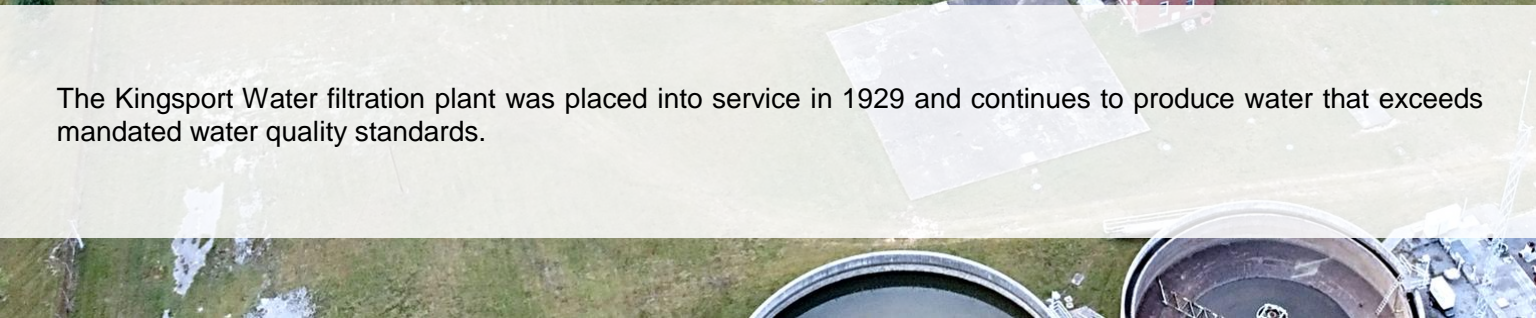
Cross Contamination Control

Over the next few months, the warm weather will bring people outdoors to work in their yards and gardens and begin preparing their swimming pools. The Kingsport Water System would like to ensure that our customers are aware of the dangers associated with these activities. An ordinary garden hose is a common way to contaminate a water supply. When the hose is submersed in any liquid or attached to certain devices used to spray pesticides or herbicides, this forms a cross connection. A cross connection is a situation where a possible source of contamination is directly linked to our public water system. If the end of your hose is connected to a chemical container, swimming pool or other contaminant during a water main break or fire, the substance can be siphoned back into the water system. This condition, known as back siphonage, could cause a public health hazard. Devices are available to prevent this problem; however the best solution is to always be careful how you use your water hose.

Please help us provide a safe supply of water to all of our customers. Remember: never place your water hose in anything you would not want to drink. For information on cross connections, and how to protect against them, call our office at (423) 224-2635.



The Kingsport Water filtration plant was placed into service in 1929 and continues to produce water that exceeds mandated water quality standards.



A Treatment System

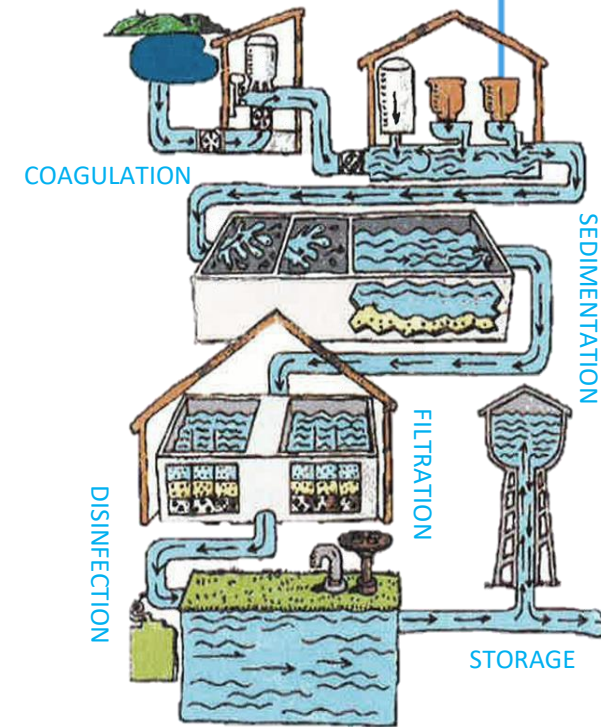
At the treatment plant, shortly after the “raw” (untreated) water is pumped to the treatment plant it enters the flash mix where it is treated with both chlorine and a coagulant.

Beginning chlorination here allows the chlorine a longer contact time, thus giving the chlorine more time to react with microorganisms. Coagulants cause light, fine materials suspended in the water to clump together into larger heavier particles.

Next, the slow flow through the sedimentation basin allows the heavier particles to settle out. Sedimentation removes the majority of the sediment from the water.

Filtration, the next step, removes the remaining suspended material, lowering the turbidity level to well below the state’s maximum containment level (mcl). The filtered water is then treated with chlorine for disinfection and fluoride to reduce tooth decay.

The “finished” water is then pumped into the distribution system for public use.





The Kingsport Water filtration plant is a conventional treatment plant consisting of coagulation, flocculation, sedimentation and filtration.

Your water begins by being pumped from the South Fork of the Holston River to the Water Treatment Plant where it undergoes physical and chemical treatment processes to produce high quality potable water.

Water Quality Data

Your drinking water is regulated by the Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency (EPA). The Kingsport Water Department regularly monitors for over 80 regulated contaminants to make sure your drinking water is safe. The results of our 2020 water quality monitoring are shown in the following tables. The substances listed in the tables below are the only substances that were detected above TDEC and EPA reporting levels. Reporting levels are the lowest level a contaminant can be detected with present laboratory methods, which are also known as minimum detection limits.



We are proud to report that the City of Kingsport's water meets or exceeds all drinking water standards.



The on campus laboratory plays an important part in ensuring the customer is receiving a quality product. The laboratory is certified by the State of Tennessee to analyze water according to their requirements and recommendations. Water is analyzed before leaving the treatment plant and in the distribution system before it enters your home. From the latest spectrophotometer available to the most sensitive coliform detecting method on the market, the lab is well prepared for water analysis.

Abbreviations & Definitions

AL — Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

BDL — Below Detection Limit.

MCL — Maximum Contaminant Level, or 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.

MCLG — Maximum Contaminant Level Goal, or 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 Disinfectant Level, or the highest level of a disinfectant allowed in drinking water. There is

convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG — Maximum Residual Disinfectant Level Goal, or the level of 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.

TT — Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water. Example: Kingsport adds a zinc-orthophosphate corrosion inhibitor to the drinking water to create a type of barrier in the underground lines and lines in the individual homes. This barrier comes between the flowing water and the pipe it is flowing through in order to keep contaminants that may come from the pipes from entering the water.

Turbidity Level — A measure of the cloudiness of water; it is a good indicator that our filtration system is functioning properly.

Units of Measure — Definitions for units of measure used in the CCR:

- ppm or mg/L — Parts per million or milligrams per liter, explained in terms of money as one penny in \$10,000.
- ppb or mcg/L — Parts per billion or micrograms per liter, explained in terms of money as one penny in \$10,000,000.
- pCi/L — Picocuries per liter (a measure of radio activity).
- NTU — Nephelometric Turbidity Units — Turbidity is a measure of the clarity of the water. Turbidity in excess of 5 NTUs is just noticeable to the average person.

2021 Water Quality Data Results

Contaminant	Violation Yes/No	Level Found	Range Detected	Date of Sample	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria	NO	<1%	N/A	2021 Daily	Presence or Absence	0	TT	Naturally present in the environment
Turbidity ¹	NO	0.04	0.02—0.15	2021 Daily	NTU	N/A	TT	Soil runoff
Copper	NO	90th % = 0.42	0 of 50 samples above the action level	2020 Triennial	ppm	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride	NO	0.45	0.41—0.49	2021 Daily	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead ²	NO	90th % = 2.0	0 of 50 samples above the action level	2020 Triennial	ppb	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate ³	NO	0.578	N/A	2021	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium	NO	4.63	N/A	2021	ppm	N/A	N/A	Erosion of natural deposits; used in water treatment
TTHM ⁴ [Total Trihalomethanes]	NO	42	27.7—67	2021 Quarterly	ppb	N/A	80	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	NO	31	15.6—44	2021 Quarterly	ppb	NA	60	By-product of drinking water disinfection
Total Organic Carbon ⁵	NO	1.35	0.85—2.06	2021 Monthly	ppm	TT	TT	Naturally present in the environment
Disinfectant	Violation Yes/No	Level Found	Range Detected	Date of Sample	Unit Measurement	MRDLG	MRDL	Likely Source of Contamination
Chlorine	NO	1.85	1.5—2.0	2021 Daily	ppm	4	4	Water additive used to control microbes

¹100% of our samples were below the turbidity limit.

² Infants and young children are typically more vulnerable to lead in drinking water than the general population.

³Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated may die. Symptoms include shortness of breath and blue baby syndrome.

⁴While your drinking water meets EPA's standard for trihalomethanes, it does contain low levels. 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 systems, and may have an increased risk of getting cancer.

⁵We have met all treatment technique requirements for Total Organic Carbon removal.

We found all of these substances to be at safe levels.



Did you know that the earth's surface is 70% water, but only 1% is suitable for human use? There is no "new" water, it just gets recycled and reused. Through our integrated management approach with clean Drinking Water, Wastewater and Stormwater, the City of Kingsport is continuing our proud tradition of being good environmental stewards and preserving Earth's most precious resource for future generations.

Safety Standards

Is MY water safe to drink?

The presence of contaminants does not necessarily indicate that the water poses a health risk. Most drinking water, including bottled water, contains small amounts of some contaminants. In order to ensure your tap water is safe, the Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health; however, they are not required to submit a water quality report to the public.



We are proud to report that Kingsport's water meets or surpasses all EPA and State health regulations. As demonstrated by the test results, the Kingsport Water Department conducts regular tests for numerous contaminants, and has found few. The existing contaminants are all well below the maximum safe levels.

Lead and Copper 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.

The City of Kingsport 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 at (1-800-426-4791) or by visiting Safe Drinking Water at <http://www.epa.gov/safewater/lead>



All the land area that drains into a given body of water is a watershed. Small watersheds combine to become big watersheds, sometimes called basins. When water from a few acres drains into a little stream, those few acres are its watershed. When that stream flows into a larger stream, and that larger stream flows into a bigger river, then the initial small watershed is now part of that river's watershed. Watersheds are a logical way to think about the connection between the land and the quality of water we enjoy.

Should I be Concerned?

Do I need to take special precautions?

Some individuals 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, persons with AIDS/HIV or other immune system disorders, some elderly, and infants can be particularly at risk of infection. These people should seek advice about drinking water from their healthcare 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 at (800-426-4791).

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Monitoring of our source water indicated the presence of *cryptosporidium* in 1 out of 9 samples tested. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immune-compromised people have more difficulty and are at a greater risk of developing a severe, life threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection.

For more information on *cryptosporidium*, contact the Safe Drinking Water Hotline (800-426-4791).

We found all of these substances to be at safe levels.



How we manage and treat the land has a direct impact on the ability of water to support a number of important public uses like swimming, fishing, aquatic species habitat and drinking water supply. We all live downstream from someone, and what happens in a watershed does not just stay in that watershed.



Sources and Substances

What types could be in my water?

As water travels over the surface of the land it dissolves naturally occurring minerals and, in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or humans. Although these substances could be present in “raw” water, our water meets all of the EPA’s health standards. We have tested for over eighty (80) substances that may be present in our drinking water.

Substances that may be present in “raw” water include:

- Microbial organisms, such as viruses and bacteria, which may be from sewage plants, septic systems, agricultural livestock operations and wildlife.

- Inorganic compounds, such as salts and metals, which can be naturally occurring or result from 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, stormwater runoff and residential uses.

- Organic chemicals including synthetic and volatile organic chemicals, which are the by-products of industrial processes and petroleum production, and can also come from gas stations, storm water runoff and septic systems.

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

We found all of these substances to be at safe levels.



We believe that those who are well informed are our best allies in supporting improvements necessary to maintain high water quality standards. Educating and communicating to the public about the importance of water quality is very important to Kingsport's Water Department.

You Can Help

Protect the Environment & Drinking Water Sources

Unused Medications

A few small steps can make an important difference in safeguarding lives and protecting the environment. Follow your medication prescriber's instructions and use all medications as instructed. If you do not use all of your prescribed or over-the-counter medication, you can take a few small steps to make a huge impact in safeguarding lives and protecting the environment by disposing of unused medicines properly.

DO NOT FLUSH unused medications or **POUR** them down a sink or drain.

These medications travel through pipes to the Wastewater Treatment Plant. Wastewater Treatment Plants are not designed to remove unused medications and can pass through the treatment process ultimately entering our waterways.

Unused medications can be disposed of at the Kingsport Police Department's **DRUG DROP OFF ZONE** located at the Justice Center. For more information please call 229-9433.

To learn more about pharmaceuticals and drinking water visit

<https://www.tnpharm.org/patient-resources/disposing-of-unwanted-drugs>



A bioretention area, like the one at Water Services, is a shallow and landscaped depression that receives runoff from impervious surfaces. These areas are often referred to as rain gardens.

You Can Help

Protect the Environment & Drinking Water Sources

Stormwater Runoff

Worried about water quality? Did you know that stormwater runoff is the leading cause of water quality problems in the United States? The experts call it nonpoint source pollution. After heavy rain, millions of gallons of water containing soil, silt, oils and lubricants flow from properties into the natural world downstream. It disturbs the breeding, feeding, and nurseries for the many species of invertebrates, fish and migratory birds.

Old attitudes about what happens beyond the four walls of your own home or your own business not being your problem are changing. Many in or around the City of Kingsport enjoy the benefit of outdoor recreation, hiking, and fishing. We need to take measures to care for the land we occupy and beyond by mitigating pollutants originating from our properties.

Homeowners can connect their sump pumps, roof drains, and downspouts into existing storm drains and reduce the erosion caused by runoff.

Business owners can change the mentality of parking lots as drainage zones by turning them instead into flood control, infiltration and filtration zones. They can create retention areas for runoff and fill them with plants that can survive periodic flooding. These basins slow the movement of water so that pollutants are captured, broken down and digested by plant life before they reach the watershed and estuaries.

Who benefits from such enlightened stormwater management? The water supply and frogs, fish, birds, turtles and other wildlife downstream, the very nature that we all want to enjoy.

Unregulated Monitoring

2018 Unregulated Contaminant Monitoring

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. For additional information call the Safe Drinking Water Hotline at (800) 426-4791.

Unregulated Monitoring – Water Treatment Plant Monitoring

Contaminant	Violation Yes/No	Level Found	Range Detected	Date Of Sample	Unit Of Measure	MCLG	MCL
Total Organic Carbon	NO	1.45	1.4 - 1.5	2018	PPM	N/A	N/A
Manganese	NO	0.0147	0.0006 - 0.044	2018	PPM	N/A	N/A

Unregulated Monitoring – Distribution System Monitoring

Contaminant	Violation Yes/No	Level Found	Range Detected	Date of Sample	Unit of Measure	MCLG	MCL
Bromochloroacetic Acid	NO	0.0027	0.0014 - 0.0038	2018	PPM	N/A	N/A
Bromodichloroacetic Acid	NO	0.0031	0.0017 - 0.0041	2018	PPM	N/A	N/A
Dichloroacetic Acid	NO	0.0190	0.0072 - 0.031	2018	PPM	N/A	N/A
Trichloroacetic Acid	NO	0.0252	0.013 - 0.038	2018	PPM	N/A	N/A
Monobromoacetic Acid	NO	0.0009	0.0007 - 0.0011	2018	PPM	N/A	N/A
Monochloroacetic Acid	NO	0.0028	0.0023 - 0.0032	2018	PPM	N/A	N/A



Safe and reliable drinking water is essential for everyday life. The City of Kingsport is fortunate to have an excellent source of water. Federal and State agencies set stringent drinking water regulations to ensure municipalities provide safe drinking water to its citizens. The Kingsport Water Department exceeds these standards.



Photo courtesy of *David Cate*