KUB WATER QUALITY REPORT

2025

KUB: 865-524-2911 (Español oprima el numero 2)
www.kub.org

Knoxville Utilities Board has more than 85 years of history serving Knoxville and the surrounding areas with high-quality utility services. This year is an especially good time to look back at our history, as it marks the 100th anniversary of our Mark B. Whitaker (MBW) Water Treatment Plant.

The historic plant marked a shift in Knoxville toward a more reliable, efficient, and modern water supply system in the 1920s. Today, KUB continues to modernize its water system to maintain excellent quality and reliability for our customers through our Water Supply Master Plan. A cornerstone of the master plan – a $67 million filters project – was completed this year, adding operational flexibility and resiliency at the MBW Water Treatment Plant.

At our Water Quality Laboratory, lab technicians perform approximately 100,000 tests per year checking for more than 150 contaminants. Our professional staff at the plant and in the field test water at various points in our water treatment and distribution process.

We are proud that every day, we continue the longstanding commitment to provide the community with high-quality, safe drinking water.

If you have questions, please call KUB at 865-524-2911.

Gabriel J. Bolas II, *KUB President & CEO*

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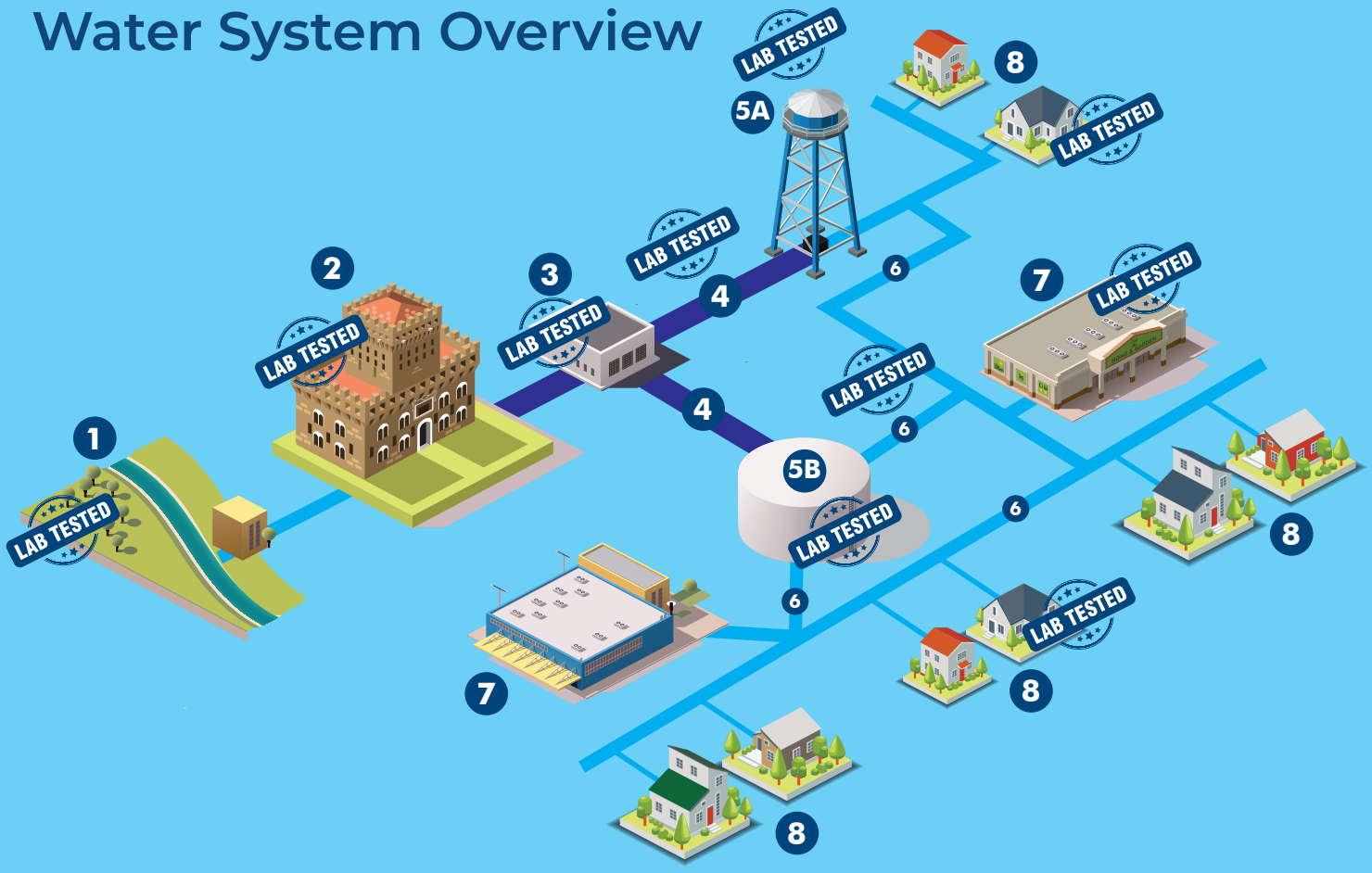
Water System Overview



1. River Intake
2. Treatment Plant
3. Finished Water Pump Station
4. Transmission Mains
5. Storage Facilities
   (A: Elevated Tank B: Ground Reservoir)
6. Distribution Mains
7. Commercial Service
8. Residential Service

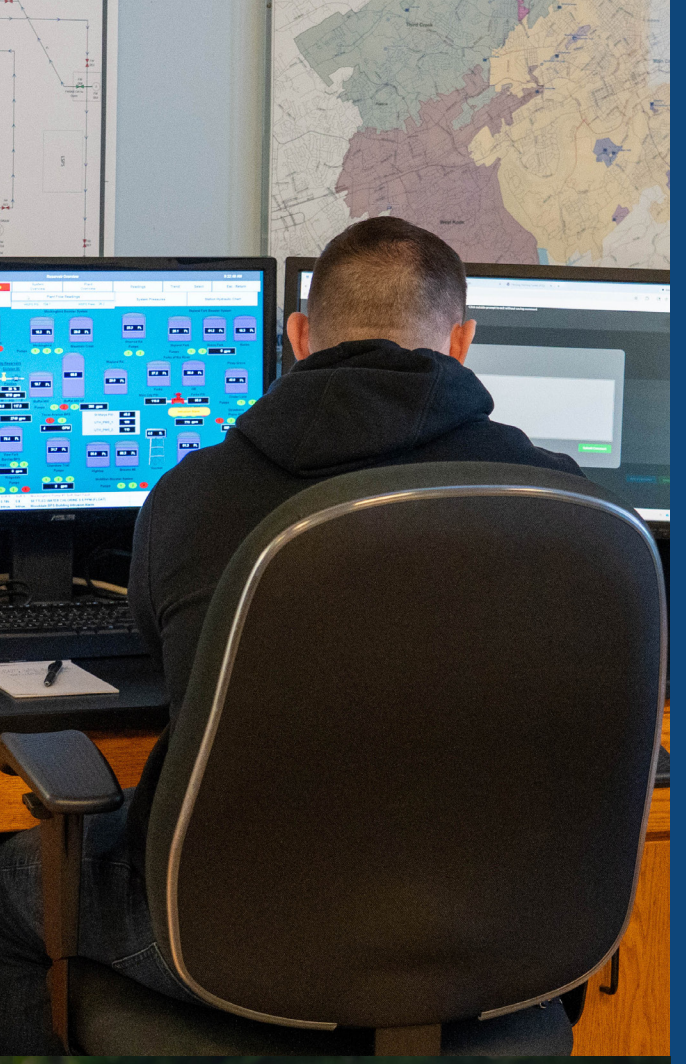
Award-Winning Service

KUB is recognized by various national organizations for its work to provide high-quality water to its customers. Most recently, KUB earned the Founding Member Award from the Association of Metropolitan Water Agencies (AMWA) for its long-term service to AMWA.

Additionally, the National Association of Clean Water Agencies (NACWA) awarded KUB its National Environmental Achievement Award for Public Information and Education for KUB's water education and outreach programs. This award honors agencies for their inventive efforts to educate the public on water treatment processes.

Association of Metropolitan Water Agencies (AMWA) Founding Member Award

National Association of Clean Water Agencies (NACWA) National Environmental Achievement Award for Public Information and Education



Drinking Water Sources

Sources of drinking water (tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. KUB's source is surface water from the Tennessee River, which supplies the Mark B. Whitaker Water Plant.

As water travels over land or through the ground, it dissolves naturally occurring minerals and, sometimes, radioactive material. It can pick up substances resulting from human activity or the presence of animals.

Contaminants that may be 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 occur naturally 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 byproducts 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.

KUB's water source is rated reasonably susceptible to potential contamination. To ensure safe drinking water, all public water systems treat and routinely test their water under the guidance of the Source Water Assessment program. Summaries, susceptibility scorings and the full TDEC report to EPA can be viewed online at https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html, or you may contact KUB for copies of specific assessments.

Protecting Our Source Water

Each of us could be adding to source water pollution without even knowing it. Even the smallest streams typically lead to the Tennessee River, so although it might seem too far away to matter, most streams (and storm drains) lead to our source. Reducing pollution at all levels and locations is important! Here are ways you can help protect our source water and the environment.

Recycle

In addition to household recycling, be sure to recycle:

- Unwanted automotive products
- Cleaning products
- Pesticides
- Lawn chemicals

Take waste to:
Household Hazardous Waste Facility, 1033 Elm Street
Please note: Latex paint is no longer accepted.

Medication Disposal

Never flush unused medicine down drains or toilets.

Take medication to:

- Collection sites
- Collection events
- Permanent drop box:
  Knoxville Police Dept. Safety Building,
  1650 Huron Street, Knoxville, TN 37917

Reducing PFAS

Poly- and Perfluoroalkyl Substances (PFAS) are man-made chemicals that are resistant to breaking down in the environment and some may have adverse health effects. KUB has partnered with TDEC and participated in a source water monitoring study. We are pleased to share there were no detections of PFAS compounds at levels of concern. To learn more about the many sources of PFAS and how to reduce the risk of exposure, please visit **www.epa.gov/pfas.**

Water Quality Summary

INORGANIC MONITORING				
Parameter	**Range or Level Detected**	**MCLG**	**MCL**	**Likely Source in Drinking Water**
Barium	24 ppb	N/A	2000 ppb	Discharge of drilling wastes and metal refineries; erosion of natural deposits
Nitrate	0.48 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Fluoride	0.47 - 0.68 ppm (avg 0.57 ppm)	4 ppm	4 ppm	Erosion of natural deposits; water additive, which promotes strong teeth; discharge from fertilizer and aluminum factories
Sodium	10 ppm	N/A	N/A	Used in treatment process

ORGANIC AND DISINFECTION BYPRODUCT MONITORING				
Parameter	**Range or Level Detected**	**MCLG or MRDLG**	**MCL or MRDL**	**Likely Source in Drinking Water**
Total Organic Carbon (Source)[1]	2.0 - 3.3 ppm (average 2.3 ppm)	N/A	TT	Naturally present in the environment
Total Organic Carbon (Tap)[1]	1.2 - 1.9 ppm (average 1.5 ppm)	N/A	TT	Naturally present in the environment
Total Trihalo-methanes (THM)	Maximum LRAA: 56 ppb[2] Individual site range: 20 to 79 ppb	N/A	80 ppb	Byproduct of drinking water chlorination
Haloacetic Acids (HAA)	Maximum LRAA: 31 ppb[2] Individual site range: 10 to 40 ppb	N/A	60 ppb	Byproduct of drinking water chlorination
Chlorine Dioxide	0.10 ppm	MRDLG = 0.8 ppm	MRDL = 0.8 ppm	Water additive used to control microbes
Chlorine	Maximum Running Annual Average: 1.6ppm (range: 0.5 – 2.4 ppm)	MRDLG = 4 ppm	MRDL = 4 ppm	Water additive used to control microbes
Chlorite	0.02 - 0.04 ppm (average 0.02 ppm)	0.8 ppm	1 ppm	Byproduct of drinking water disinfection

TURBIDITY MONITORING				
Parameter	**Range or Level Detected**	**MCLG**	**MCL**	**Likely Source in Drinking Water**
Turbidity[3]	0.01 - 0.11 NTU	N/A	TT	Soil Runoff

LEAD AND COPPER MONITORING				
Parameter	**90th Percentile Level (Range Detected)**	**MCLG**	**MCL**	**Likely Source in Drinking Water**
Copper	0.196 ppm (range: 0.009 – 0.345 ppm)	1.3 ppm	AL=1.3 ppm	Corrosion of household plumbing system
Lead[4]	0.6 ppb (range: <0.5 – 2.9 ppd)	0 ppb	AL=15 ppb	Corrosion of household plumbing system

ADDITIONAL MONITORING[5]	
Parameter	**Average Level Detected**
Alkalinity	75 ppm
Aluminum	25 ppb
Calcium	26 ppm
Chloride	17 ppm
Conductivity	240 µmhos/cm
Hardness	94 ppm
Iron	4 ppb
Orthophosphate	0.88 ppm
pH	7.3 Standard Units
Sulfate	13 ppm
Total Dissolved Solids	120 ppm
Zinc	87 ppb

[1] KUB met the Treatment Technique requirement for Total Organic Carbon in 2025.

[2] Compliance is determined by calculating a quarterly Locational Running Annual Averages (LRAAs) at all the required sampling sites. The range includes the highest and lowest results obtained from monitoring sites across our distribution system in 2025.

[3] No Turbidity violations were incurred during 2025. We met the treatment technique for turbidity with 100% of monthly samples below the turbidity limit of 0.3 NTU. Turbidity is a measure of the cloudiness of the water. KUB monitors turbidity because it is a good indicator of the effectiveness of our filtration system.

[4] Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. KUB is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. If you are concerned about lead in your water and wish to have your water tested, contact KUB at 865-524-2911. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at https://www.epa.gov/safewater/lead.

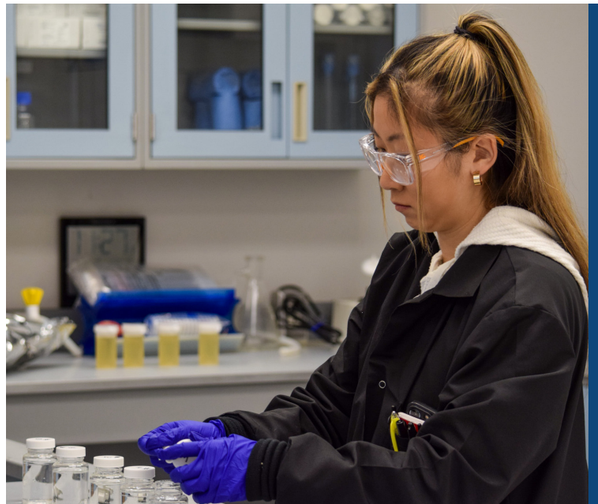
[5] KUB's drinking water meets all existing standards for safe water. In addition to the required testing, KUB tests for over 80 additional parameters. Most of the substances tested for were not found in our water. This table includes the results for additional parameters that were detectable.

TERMS AND DEFINITIONS

Action Level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Locational Running Annual Average (LRAA)	The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.
Maximum Contaminant Level (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.
Maximum Contaminant Level Goal (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 Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that adding a disinfectant is necessary for the control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	Below this level of a drinking water disinfectant, there is no known or expected risk to health. MRDLGs do not reflect the benefits of using disinfectants to control microbial contaminants.
Nephelometric Turbidity Unit (NTU)	A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

Note: To make the following common scientific measures of substances in water easier to understand, we have related them to examples.

Parts per million (ppm) or milligrams per liter (mg/l)	One part per million is equivalent to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.



State-of-the-Art Water Quality Laboratory

KUB is proud to serve our customers with one of the **largest water quality labs certified by the State of Tennessee.** The lab supports KUB's daily operations and allows us to quickly respond to customer concerns.

Backflow assemblies prevent contamination of drinking water.

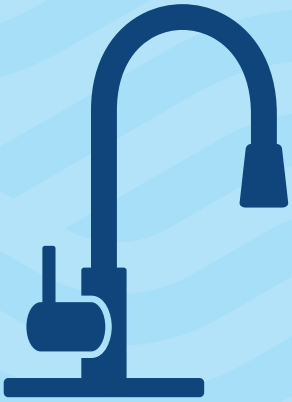
Protecting Our Drinking Water

State and federal regulations require KUB to operate a Cross-Connection Control Program to protect the community's drinking water from possible contamination. Anything customers attach to plumbing that may introduce contaminants is a potential cross-connection. If water pipes lose pressure, water from homes or businesses with cross-connections may contaminate the drinking water. To prevent that, all customers with potential cross-connections must install, test, and maintain backflow prevention assemblies. Customers may need an assembly if they use chemicals or processing equipment, have an alternative water source, or have irrigation systems or fire protection systems. Unprotected cross-connections can introduce public health risks. Therefore, KUB must ensure properties with risks have properly working backflow assemblies to ensure water quality and compliance. For more information, visit www.kub.org/crossconnection. If you have questions or think that you may have a cross-connection, please call KUB at 865-524-2911.

Did you know

When filling pools, hot tubs, or water troughs, keeping the hose above the waterline creates an air gap, which prevents a potential cross-connection. The gap should be at least twice the diameter of the hose, but not less than 1 inch.

Keeping the Lead Out

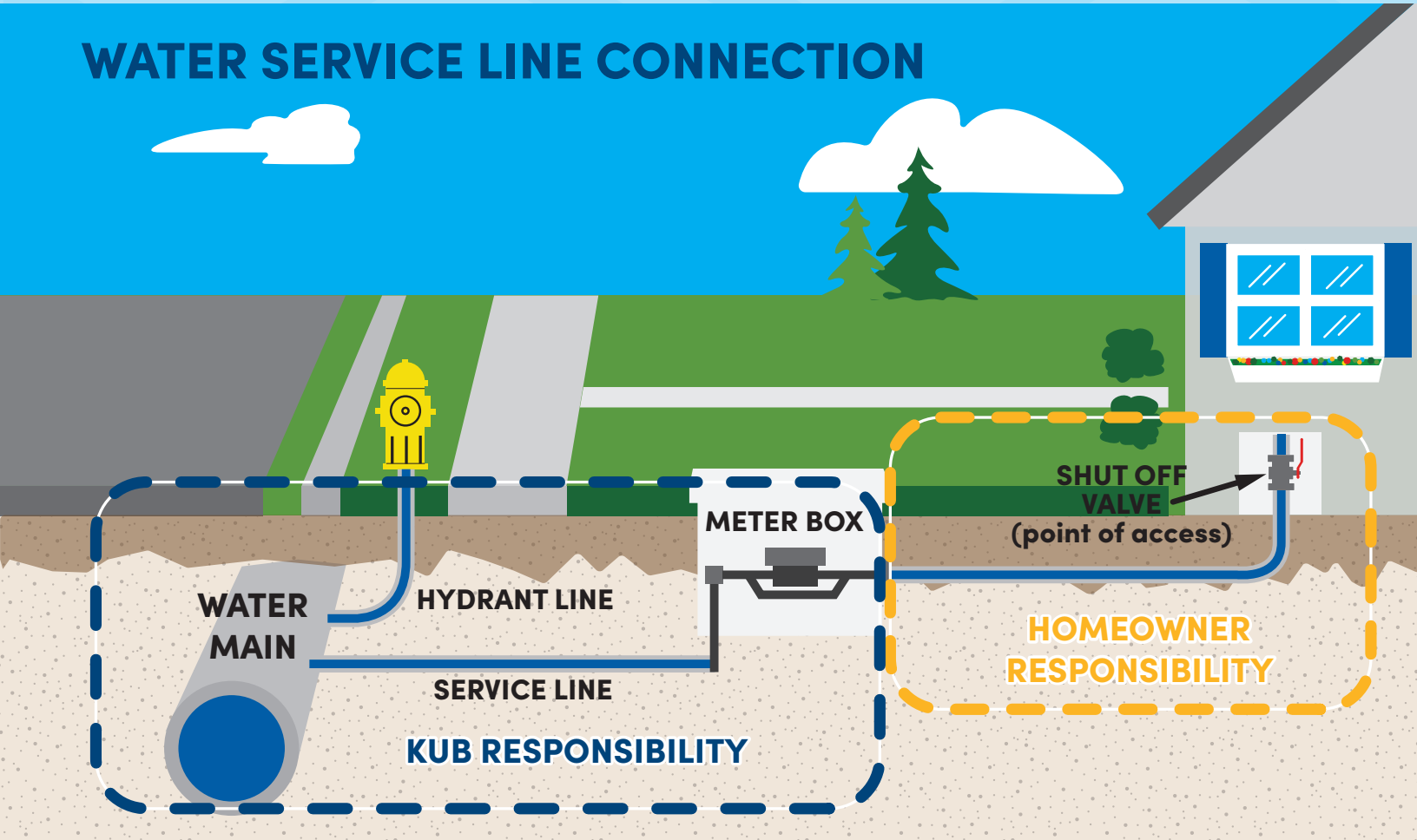


Although KUB has determined that our customers have no lead service lines, your home's plumbing may still affect the quality of water coming from your tap. Concerns about lead in drinking water primarily come from the corrosion, or wearing away, of materials in household plumbing or fixtures that may contain traces of lead. To control corrosion and reduce the risk of lead from customers' plumbing, KUB continues to use a safe corrosion inhibitor that meets strict standards for use in drinking water. KUB also routinely monitors water quality to ensure effective corrosion control. Those efforts greatly reduce corrosion and ensure that KUB's water will continue to comply with all regulatory standards for lead.

KUB has an exceptional water quality record and takes the responsibility of providing safe and reliable water seriously. KUB recently completed its water service line inventory as required by the EPA and is **proud to share there was no evidence of lead lines found throughout the water distribution system**. KUB worked with a consultant to review historical records that reflected the type of material used during installations. Additional methods used in the inventory included statistical analysis, customer surveys, in-home inspections, and service excavations to appropriately determine water service line material types.

If customers have questions about their water service line (between the meter and their home or business), they can visit www.kub.org/serviceinventory for more information or call us at 865-524-2911.

WATER SERVICE LINE CONNECTION



Water Safety Regulations

To ensure tap water is safe to drink, EPA and the Tennessee Department of Environment and Conservation (TDEC) prescribe regulations that limit the amount of certain contaminants in water from public water systems. The U.S. Food and Drug Administration (FDA) establishes regulations and limits for contaminants in bottled water, which must provide the same level of 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.

For more information about contaminants and potential health effects, call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Information for Consumers at Risk

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people, such as people with cancer undergoing chemotherapy, people 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/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from EPA's Safe Drinking Water Hotline, 1-800-426-4791.

Learn more:
www.kub.org/water

Contact Information

For more information about water contaminants and potential health effects, call the EPA Safe Drinking Water Hotline at 1-800-426-4791. If you have questions about KUB's water or this report, contact KUB at 865-524-2911 or visit our website at www.kub.org/water. KUB's Board meets monthly in open public session. Please feel free to participate in the meetings. Information on regularly scheduled meetings can be obtained on our website or by calling KUB.

Información en Español: Esta información es muy importante. Por favor traduscalo o hable con alguien que lo entienda bien. Para mas información en español, llame a KUB al numero de teléfono 865-524-2911 y oprima el numero 2.

KUB

KNOXVILLE
UTILITIES BOARD

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