

NORTHEAST KNOX UTILITY DISTRICT

ANNUAL DRINKING WATER QUALITY REPORT

Northeast Knox Utility District is pleased to present to its' customers this year's Water Quality Report. This report is designed to inform the customer about the quality water and services Northeast Knox Utility District delivers to the customer everyday, and is prepared in cooperation with the Environmental Protection Agency and the Tennessee Department of Environment and Conservation Division of Water Supply. Northeast Knox Utility District's goal is to provide the customer a safe and dependable supply of drinking water. The utility is again proud of the fact that it has met state and federal drinking water standards.

Northeast Knox Utility District will be making improvements to the distribution system in the near future to better serve you.

Northeast Knox Utility District is committed to ensuring the quality of its' customers water and would like its' customers to be informed about their water quality. We ask our customers to please make sure a cut-off valve is installed on your line. We also ask that you use care not to damage the automated meter and equipment.

If you have any questions concerning this report please call Gregg Morgan at 687-5345 or Jamie Smith at 525-0782. Northeast Knox Utility District's Board of Commissioners meetings are held at its' office at 7214 Washington Pike on the 4th Monday of each month, starting at 8:30AM. Please feel free to participate in these meetings.

The Commissioners of Northeast Knox Utility District serve four year terms.

Vacancies on the Board of Commissioners of Northeast Knox Utility District are filled by the certification of a list of three nominees to fill the vacancy with the Knox County Mayor. The Knox County Mayor appoints one of these three nominees to fill the vacancy. If the Knox County Mayor does not appoint one of the nominees from the Board's list of three nominees, the Knox County Mayor enters an order rejecting the three nominees. The Board of Commissioners continue to certify additional lists of three nominees to the Knox County Mayor until an appointment is made from such additional lists. A vacancy will exist in October 2018 on the District's Board of Commissioners due to the expiration of the term of a current member of the Board. The Board plans to certify a list of three nominees to the Knox County Mayor to fill this vacancy at it's August 2018 meeting. A customer may submit a name for consideration by the Board for the list of nominees. To be considered the name must be mailed to the District's General Manager no later than one week before the August 2018 Board meeting. Qualifications established by the Board for nominees are available upon request. Decisions by the Board of Commissioners on customer complaints brought before the Board of Commissioners under the District's customer complaint policy may be reviewed by the Utility Management Review Board of the Tennessee Department of Environment and Conservations pursuant to Section 7-82-707(7) of Tennessee Code Annotated.

Richard C. Phillips
General Manager

The following Water Quality Data table shows the results of Northeast Knox Utility District's monitoring for the period of January 1, thru December 31, 2017. In the table the customer will find many terms and abbreviations. To help better understand these terms Northeast Knox Utility District has provided the following definitions.

Turbidity - Turbidity does not present any risk to your health. We monitor turbidity, which is a measure of the cloudiness of water, because it is a good indicator that our filtration system is functioning properly.

(nd) - non-detects - laboratory analysis indicates that the constituent is not present.

(ppm) - parts per million or (mg/l) milligrams per liter - one part per million corresponds to one minute in 2 years or a single penny in \$10,000.

(ppb) - parts per billion or micrograms per liter - one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

(pCi/l) - picocuries per liter - A measure of radioactivity in water.

(mrem/yr) - millirems per year - a measure of radiation absorbed by the body.

(MFL) - million fibers per liter - A measure of the presence of asbestos fibers that are no longer than 10 micrometers.

(NTU) - Nephelometric Turbidity Unit - A measure of the clarity of water. Turbidity of 5NTU is just noticeable to the average person.

(AL) - Action Level - The concentration which, if exceeded, triggers treatment or other requirements which water systems must follow.

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

(MCL) - Maximum Contaminant Level - or the highest level of 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 - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

(MRDLG) - Maximum Residual Disinfectant Level Goal, or 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.

(MRDL) - Maximum Residual Disinfectant Level, or the level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

(BDL) - Below Detectable Limit

(P/A) - Presence or Absence of a Contaminant

Unless otherwise noted the data presented in this table is from sampling performed during the 2017 calendar year

About the data: Northeast Knox Utility District monitors for some contaminants less than once per year, and for those contaminants, the date of the last sample is shown in the table.

300 bacteria samples were taken in the distribution system in 2017 with 0 Total Coliform MCL violations. Total Coliform is a bacteria naturally present in the environment and is used as an indicator that other, potentially harmful bacteria may be present.

Northeast Knox Utility District monitored regulated and unregulated volatile organic chemicals four separate quarters throughout the calendar year 2015. All results are within compliance level or below detectable levels.

Northeast Knox Utility District sampled four Synthetic Organic Compounds in 2016 including Atrazine, Simazine, Picloram, and 2,4-D. All were found to be below detectable limits.

25 Inorganics sampled in 2011 were within compliance levels or below detectable limits, (See footnote number 6).

All sample records, including regulated, unregulated, special unregulated chemical monitoring, special chemical monitoring, and any other water quality reports, are available for viewing during normal business hours with an appointment.

Water Quality Data Table

Contaminant	Violation Y/N	Level Detected	Unit Measurement	Range of Detection	MCLG	MCL	Likely Source of Contamination	Date of Sample
Turbidity ¹	N	0.053 Annual Average	ntu	0.03 to 0.19	n/a	TT	Soil runoff	Max. Sample 12/5/17
Copper ²	N	.113 90th perc.	ppm	.00217 to 0.141	1.3	AL= 1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	08/24/17 thru 9/1/17
Sodium	N	17.7	ppm	17.7	n/a	none	Naturally present in the environment	2/13/2017
Fluoride	N	0.59 Annual Average	ppm	0.45 to 0.72	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	01/01/17 thru 12/31/17
Lead ²	N	1.06 90th perc.	ppb	BDL to 2.24	0	AL= 15	Corrosion of household plumbing systems; Erosion of natural deposits	08/24/17 thru 9/1/17
THAA (total Haloacetic acids) ⁵	N	32.1 Highest LRAA	ppb	17.7 to 39.7	n/a	60	By-product of drinking water chlorination	01/01/17 thru 12/31/17
TTHM (Total trihalo- methanes) ⁵	N	73.8 Highest LRAA	ppb	33.8 to 89.1	n/a	80	By product of drinking water chlorination	01/01/17 thru 12/31/17
Total Organic Carbon ³	N	1.29 Annual Average	ppm	33% reduction, 15%reqd.	n/a	TT	Decaying organic material	01/01/17 thru 12/31/17
Nitrate	N	0.549	ppm	0.549	10	10	Erosion of natural deposits, runoff from fertilizer, septic runoff	2/13/2017
Chlorine	N	1.78 Annual Average	ppm	0.60 to 2.80	MRDL G 4	MRDL 4	Used as disinfectant in water treatment	01/01/17 thru 12/31/17
Arsenic ^{4,6}	N	<1.0	ppb	<1.0	n/a	10	Run off from orchards, glass and electronics production waste, erosion of natural deposits	02/08/11
Total Coliform Bacteria	N	0	p/a	0	0	1	Naturally Present in the Environment	01/01/17 thru 12/31/17
Sulfate ⁶	N	13.0	ppm	13.0	n/a	250	Naturally present in the environment	02/08/11
Cryptosporidium ⁷	N	.025	oocyst/L	0 to 2.0	N/A	N/A	Naturally present in surface water throughout the US	01/01/17 thru 12/31/17

1- 1,569 Turbidity samples were analyzed in 2017 with an annual average of 0.053 NTU, Northeast Knox Utility met the treatment technique for turbidity with 100% of our samples below the turbidity limit of 0.30 NTU.

2- Lead and Copper samples only required every 3 years. 30 samples from various points in the distribution system. 0 sites of 30 exceeded Action level. *"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. Northeast Knox Utility District 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 or at <http://www.epa.gov/safewater/lead>"*

3- Northeast Knox Utility District met the treatment technique requirements for TOC in Calendar year 2017.

4- Laboratory detection limit 1.0 ppb.

5- *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.* LRAA= Locational Running Annual Average.

6- Sulfate and Arsenic are among 26 inorganic chemicals waived in the Jan. 1, 2014 through Dec. 31, 2016 sampling cycle. Next samples due 2020.

7- Northeast Knox started E.P.A. mandated cryptosporidium monitoring in October of 2016. Cryptosporidium is a microbial parasite which is found in surface water throughout the U.S. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Monitoring of our source water indicated the presence of cryptosporidium in 2 out 12 of samples tested in 2017. 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 greater risk of developing 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).

Northeast Knox Utility District

Northeast Knox Utility District's water treatment plant is capable of producing 6,912,000 gallons per day for its' customers in Northeast Knox County and also provides water to Luttrell-Blaine-Corryton Utility District and to the City of Maynardville, TN. The plant draws its water from the Holston River and uses conventional treatment techniques.

What is the source of my water?

Your water, which is surface water, comes from the Holston River. Our goal is to protect the water from contaminants and we are working 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 source 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 Northeast Knox Utility District Water System source is 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 EPA can be viewed online at www.tn.gov/environment/dws/dwassess.shtml or you can call TDEC EAC at 1-888-891-8332 or you may contact the Water System to obtain copies of specific assessments.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. Community water systems are required to disclose the detection of contaminants; however, bottled water companies are not required to comply with this regulation. 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 (800-426-4791).

The sources of drinking water (both tap water and bottled water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, can be picked up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water:

- 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 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, EPA and Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by the public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have under-gone 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 not only their drinking water, but food preparation, personal hygiene, and precautions in handling infants and pets from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

The State and EPA require Northeast Knox Utility District to test and report on its water on a regular basis to ensure safety. Northeast Knox Utility District has met all of these requirements and would like the customer to know we observe all the rules and regulations set forth by the Tennessee Department of Environment and Conservation and the EPA. Northeast Knox Utility District scored a 99 on its most recent sanitary survey by the Tennessee Department of Environment and Conservation.

Northeast Knox Utility District works around the clock to provide top quality water to every tap. The utility asks that all its' customers help to protect the water sources, which are the heart of the community, the way of life, and the children's future.