

Estill County Water District #1 Water Quality Report 2019

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Meeting location and time:
Water District Office
Last Thursdays at 9:00 AM

Estill County Water District # 1 purchases water from Irvine Municipal Utilities. Water is also purchased from Jackson County Water Association to serve a few customers on McKee Road. Both suppliers treat surface water, Irvine from the KY River and Jackson County from Lake Beulah. The overall susceptibility of our water source to contamination is generally moderate, however, there are a few areas of concern. There are eleven roadway bridges and a railroad located within the watersheds. Other activities of concern include wastewater discharges, Tier II hazardous chemical users, waste generators or transporters, underground storage tanks and injection control wells. A complete source water assessment can be obtained or reviewed at the Estill County Water District. Under certain circumstances activities within the watershed could release contaminants and thereby pose potential risks to your drinking water. These activities, and how they are conducted, are of interest to the entire community because they potentially affect your health and the cost of treating your water. The complete source water assessment plan for Irvine and Jackson County may be reviewed at the Bluegrass Area Development District in Lexington and the Cumberland Valley Area Development District in London, respectively.

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. More information about contaminants and potential health effects may 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, and may pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: Microbial contaminants, such as viruses and bacteria, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or mining activities). In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water to provide the same protection for public health.

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. 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 (800-426-4791).

Information About Lead:

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. Your local public water system 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>.

Some or all of these definitions may be found in this report:

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 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.

Below Detection Levels (BDL) - laboratory analysis indicates that the contaminant is not present.

Not Applicable (N/A) - does not apply.

Parts per million (ppm) - or milligrams per liter, (mg/L). One part per million corresponds to one minute in two years or a single penny in \$10,000.

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

Parts per trillion (ppt) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - a measure of the radioactivity in water.

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

Million Fibers per Liter (MFL) - a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

Variations & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.

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

Spanish (Español) Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

To request a paper copy call (606) 723-3795.

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old. Copies of this report are available upon request by contacting our office during business hours.

To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

	Allowable Levels	Source	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity (NTU) TT	No more than 1 NTU*	I=	0.44	94	Yes	Soil runoff
* Representative samples of filtered water	Less than 0.3 NTU in 95% monthly samples	J=	0.09	100	No	

Regulated Contaminant Test Results Irvine (I) Jackson County (J)

Contaminant [code] (units)	MCL	MCLG	Source	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Combined radium (pCi/L)	5	0	J=	0.577	0.577 to 0.577	2019	No	Erosion of natural deposits
Barium [1010] (ppm)	2	2	I=	0.018	0.018 to 0.018	2019	No	Drilling wastes; metal refineries; erosion of natural deposits
			J=	0.011	0.011 to 0.011	2019	No	
Fluoride [1025] (ppm)	4	4	I=	1.01	0.76 to 1.2	2019	No	Water additive which promotes strong teeth
			J=	0.7	0.7 to 0.7	2019	No	
Nitrate [1040] (ppm)	10	10	I=	0.186	0.186 to 0.186	2019	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
			J=	0.253	0 to 0.253	2019	No	

Disinfectants/Disinfection Byproducts and Precursors

Total Organic Carbon (ppm) (report level=lowest avg. range of monthly ratios)	TT*	N/A	I=	1.05	0 to 1.9	2019	No	Naturally present in environment.
			J=	1.46	1 to 2.26	2019	No	

*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.

Unregulated Contaminants (UCMR 4)	average	range (ppb)	date
Manganese	J 2.507	1.17 to 3.48	2019
HAA5	J 31.167	24 to 38.7	2019
HAA6Br	J 2.721	1.31 to 3.51	2019
HAA9	J 33.888	25.81 to 42.21	2019
1-butanol	J 0.763	0 to 2.29	2019
Total Organic Carbon (Raw Water)	J 2200	2100 to 2300	2019

Your drinking water has been sampled for a series of unregulated contaminants. Unregulated contaminants are those that EPA has not established drinking water standards. There are no MCLs and therefore no violations if found. The purpose of monitoring for these contaminants is to help EPA determine where the contaminants occur and whether they should have a standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact our office during normal business hours.

Irvine Municipal Utilities

Water samples for 2019 showed that 5 percent of turbidity measurements were over 0.3 turbidity units – the standard is that no more than 5 percent of samples may exceed 0.3 turbidity units per month. The turbidity levels are relatively low. However, their persistence is a concern. Normal turbidity levels at our plant are 0.2 turbidity units. We routinely monitor your water for turbidity (cloudiness). This tells us whether we are effectively filtering our water supply.

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.

Testing results we recently received show our system did not meet the required removal ratio for TOCs. Even though TOC is not a contaminant, and therefore does not have a maximum contaminant level (MCL), a treatment technique is used to maintain acceptable levels. Each month the percent of TOC removed is compared to the percent of TOC required to be removed and a ratio is determined. These monthly ratios are used to calculate an annual average.

TOC has no health effects. However, TOC provides a medium for formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and Haloacetic Acids (HAAs). Drinking Water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

Regulated Contaminant Test Results Estill County Water District #1							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Copper [1022] (ppm) sites exceeding action level 0	AL= 1.3	1.3	0.239 (90 th percentile)	0.0027 to 0.655	Aug-17	No	Corrosion of household plumbing systems
Lead [1030] (ppb) sites exceeding action level 1	AL= 15	0	2 (90 th percentile)	0 to 39	Aug-17	No	Corrosion of household plumbing systems
Disinfectants/Disinfection Byproducts and Precursors							
Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.84 (highest average)	1.1 to 2.1	2019	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	50 (high site average)	6 to 100 (range of individual sites)	2019	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	49 (high site average)	8 to 91 (range of individual sites)	2019	No	Byproduct of drinking water disinfection.

