

Nicholas County Water District

Water Quality Report 2019

Water System ID: KY0910314
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Meeting location and time:
Nicholas Co. Water District Office
Fourth Tuesday, monthly at 5 PM

Nicholas County Water District purchases water from several suppliers. All of our suppliers withdraw and treat surface water from the following sources: Western Fleming Water District and Carlisle Water Department (Licking River) and Paris Water Works (Stoner Creek). The water from Paris is purchased through KY American (Millersburg). All of these sources have had an assessment conducted to determine the susceptibility to contamination. These analyses indicate that the susceptibility for all sources are generally moderate. There are numerous permitted operations, activities and other potential contaminant sources of moderate concern within the watersheds, which cumulatively increase the potential for the release of contaminants. Areas of concern include transportation corridors, with numerous bridges and culverts, and agricultural activities which can result in pesticides and herbicides being washed into the source water as runoff during rain events. The complete Source Water Assessment Plans can be reviewed at the respective water system offices. Contact our office for information regarding specific service areas for each water source.

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, ($\mu\text{g/L}$). 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.

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.

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.

Regulated Contaminant Test Results			C=Carlisle	WF=Western Fleming	P=Paris			
Contaminant [code] (units)	MCL	MCLG	Source	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Inorganic Contaminants								
Barium [1010] (ppm)	2	2	P= C= WF=	0.03 0.012 0.02	0.03 to 0.03 0.012 to 0.012 0.02 to 0.02	Jun-19 Feb-19 May-19	No No No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	P= C= WF=	0.8 0.5 0.7	0.8 to 0.8 0.5 to 0.5 0.7 to 0.7	Sep-19 Feb-19 May-19	No No No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	P= C=	1.9 0.913	1.9 to 1.9 0.913 to 0.913	Jun-19 Feb-19	No No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits

Disinfectants/Disinfection Byproducts and Precursors

Total Organic Carbon (ppm) (report level=lowest avg. range of monthly ratios)	TT*	N/A	P= C= WF=	1.30 1.53 1.56	0.2 to 3.09 1.12 to 2.15 1.27 to 2.51	2019 2019 2019	No No No	Naturally present in environment.
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*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.

Source Water Contaminants (untreated water)

Cryptosporidium [oocysts/L]	0	TT (99% removal)	C=	2 (positive samples)	9 (no. of samples)	2019	See Note Below	Human and animal fecal waste
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Other Constituents

Turbidity (NTU) TT * Representative samples	Allowable Levels	Source	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity is a measure of the clarity of the water and not a contaminant.	No more than 1 NTU* Less than 0.3 NTU in 95% monthly samples	P= C= WF=	3.13 1.27 0.09	95 70 100	YES YES No	Soil runoff

Cryptosporidium is a microbial pathogen found in surface water. Cryptosporidium was detected in 2 samples of 9 collected from the raw water source for Carlisle. It was not detected in the finished water. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Cryptosporidium must be ingested to cause disease and it may be spread through means other than drinking water.

Regulated Contaminant Test Results			Nicholas County Water District					
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination	
Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.20 (highest average)	0.71 to 1.69	2019	No	Water additive used to control microbes.	
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	69 (high site average)	14 to 117 (range of individual sites)	2019	YES	Byproduct of drinking water disinfection	
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	80 (high site average)	19 to 133 (range of individual sites)	2019	No	Byproduct of drinking water disinfection.	
Household Plumbing Contaminants								
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.102 (90th percentile)	0.0078 to 0.252	Jul-17	No	Corrosion of household plumbing systems	

Unregulated Contaminant Monitoring

Paris Water Works tested for a series of Unregulated Contaminants in 2019. Unregulated contaminants are those for which 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 Chad Smart with the City of Paris (859-987-2118) during normal business hours.

Violation from Paris Water Works

In December of 2019, Paris Water Works measured a turbidity of 3.13 NTUs, which is in excess of the allowed 1.0 NTU limit. Treatment at the plant was modified and Paris came back into compliance quickly. A full notification and explanation was sent to our customers at the time this occurred.

Violations from Carlisle Water

Carlisle received a violation for having a single maximum turbidity reading exceeding 1.0NTU in May 2019. Their maximum reading was a 1.27NTU. This was due to an intake pump failure on their main water source so they had to use a secondary source, which has higher levels of turbidity. They adjusted the treatment process to reduce turbidity and came back into compliance. A full notification and explanation was sent to our customers at the time this occurred. They also received a violation because more than 5% of their samples in May 2019 had a turbidity reading greater than 0.3NTU. This was also due to the switch from their primary treatment source to their secondary source. They came back into compliance the following month. A full notification and explanation was sent to our customers at the time this occurred.

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.

The following is a summary of the violations Nicholas County Water received in 2019:

Violation 2020-9950452

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 7/1/2019-9/30/2019, we did not complete all monitoring by failing to report or correctly report testing for Haloacetic Acids and Trihalomethanes (OEL). Therefore, we could not verify the quality of your drinking water to the primacy agency during that time.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. For the Stage 2 DBPR requirements we monitor for trihalomethanes (THM) and haloacetic acids (HAA). The standard for THM is 0.080 mg/L and the standard for HAA is 0.060 mg/L.

A calculation of analytical results is part of an Operational Evaluation Level Report (OEL) to determine the potential of exceeding these standards. The operational evaluation requirements are intended as an indicator of operational performance and to allow systems to identify proactive steps to remain in compliance. Failure to submit an evaluation report to the State in the required time frame is a violation and requires a public notification.

We submitted an OEL for the period 7/1/2019-9/30/2019, but the report had errors in it. There is nothing you need to do. We have since corrected and submitted the OEL.

There is nothing you need to do at this time. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

Violations 2019-9950447, 2019-9950478, 2020-9950454

Testing results showed that our system exceeded the standard, or maximum contaminant level (MCL), for haloacetic acids. The standard for haloacetic acids is 0.060 mg/L. It is determined by averaging all samples at each sampling location for the last 12 months. Haloacetic acids averaged at one of our system's locations for:

1/1/2019 through 3/31/2019 was 0.061 mg/L

4/1/2019 through 6/30/2019 was 0.069mg/L

10/1/2019 through 12/31/2019 was 0.061mg/L

We are working with our suppliers to minimize the formation of haloacetic acids while ensuring we maintain an adequate level of disinfectant. We have taken additional steps to increase flushing of water lines to determine if our efforts have been effective. We are also monitoring water storage tank levels and water flow patterns within the distribution system. Public notices were issued for each quarter we were out of compliance.

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

For more information, please contact Jackie Bromagen at (859) 289-3157 or 1639 Old Paris Road, Carlisle, KY 40311.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

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

This report will not be mailed unless requested. Copies are available at our office. If you would like a copy mailed to you please contact our office.