

Nicholas County Water District

Water Quality Report 2018

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.**

| | | C=Carlisle | | WF=Western Fleming | | P=Paris | | | |
|---|--|---------------------|----------|----------------------------|--------------------|-----------|----------------------------|--|--------------------------------|
| | Allowable Levels | | Source | Highest Single Measurement | Lowest Monthly % | Violation | Likely Source of Turbidity | | |
| | Turbidity (NTU) TT | No more than 1 NTU* | | C= 0.29 | 100 | | | | |
| * Representative samples of filtered water | Less than 0.3 NTU in 95% monthly samples | | WF= 0.09 | 100 | No | | | | |
| | | | P= 2.1 | 100 | YES | | | | |
| Regulated Contaminant Test Results | | | | | | | | | |
| 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= | 0.02 | 0.02 to 0.02 | Mar-18 | No | Drilling wastes; metal refineries; erosion of natural deposits | |
| | | | C= | 0.013 | 0.013 to 0.013 | Feb-18 | No | | |
| | | | WF= | 0.018 | 0.018 to 0.018 | May-18 | No | | |
| Fluoride [1025] (ppm) | 4 | 4 | C= | 1 | 1 to 1 | Feb-18 | No | Water additive which promotes strong teeth | |
| | | | WF= | 0.6 | 0.6 to 0.6 | May-18 | No | | |
| | | | P= | 0.59 | 0.59 to 0.59 | Nov-18 | No | | |
| Nitrate [1040] (ppm) | 10 | 10 | C= | 0.39 | 0.39 to 0.39 | Feb-18 | No | Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits | |
| | | | WF= | 0.5 | 0.5 to 0.5 | Mar-18 | No | | |
| | | | P= | 1 | 1 to 1 | Apr-18 | No | | |
| Disinfectants/Disinfection Byproducts and Precursors | | | | | | | | | |
| Total Organic Carbon (ppm) (report level=lowest avg. range of monthly ratios) | TT* | N/A | C= | 1.55 | 1 to 2.59 | 2018 | No | Naturally present in environment. | |
| | | | WF= | 1.49 | 1 to 3.33 | | | | |
| | | | P= | 1.5 | 0.88 to 2.54 | | | | |

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

| Other Contaminants | | | | | | | | | |
|-----------------------------|---|---------------|-----|--------------------|------------------|------|-----------------|------------------------------|--|
| Cryptosporidium [oocysts/L] | 0 | TT | C= | 3 | 12 | 2018 | See Crypto Note | Human and animal fecal waste | |
| | | | WF= | 3 | 9 | | | | |
| | | (99% removal) | | (positive samples) | (no. of samples) | | | | |

Cryptosporidium is a microbial pathogen found in surface water. Cryptosporidium was detected in 3 samples of 9 collected from the raw water source for Western Fleming and in 3 samples of 12 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 | |
| Inorganic Contaminants | | | | | | | | | |
| Copper [1022] (ppm) sites exceeding action level 0 | AL = 1.3 | 1.3 | 0.102 (90 th percentile) | 0.0078 to 0.252 | | Jul-17 | No | Corrosion of household plumbing systems | |
| Disinfectants/Disinfection Byproducts and Precursors | | | | | | | | | |
| Chlorine (ppm) | MRDL = 4 | MRDLG = 4 | 1.23 (highest average) | 0.69 to 1.62 | | 2018 | No | Water additive used to control microbes. | |
| HAA (ppb) (Stage 2) [Haloacetic acids] | 60 | N/A | 67 (high site average) | 22 to 88 (range of individual sites) | | 2018 | YES | Byproduct of drinking water disinfection | |
| TTHM (ppb) (Stage 2) [total trihalomethanes] | 80 | N/A | 81 (high site average) | 18 to 91 (range of individual sites) | | 2018 | YES | Byproduct of drinking water disinfection. | |

Unregulated Contaminant Monitoring

Your drinking water from Carlisle Water Works has been sampled for a series of unregulated contaminants. 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. None of the contaminants that were tested for were found at detectable levels. 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.

Violation from Paris Water Works

On April 18, 2018, Paris Water Works measured a turbidity of 2.1 NTUs, which is in excess of the allowed 1.0 NTU limit. They had a faulty coagulant pump which was immediately repaired. 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 which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

The following is a summary of the violations we received in 2018.

Violation 2018-9950444

We failed to deliver a Public Notice for violation 2018-9950432 within 30 days of receiving the violation notice. The notice was distributed late. We have taken steps to ensure the timely delivery of notices in the future.

Violation 2018-9950443

We failed to deliver a Public Notice for violation 2018-9950431 within 30 days of receiving the violation notice. The notice was distributed late. We have taken steps to ensure the timely delivery of notices in the future.

Violations 2018-9950441 and 2018-9950442

We failed to submit an Operational Evaluation Level form for trihalomethane and haloacetic acid reporting on time. A Public Notice for these violations was issued in the 2017 Consumer Confidence Report. We have taken steps to ensure we deliver these reports to Kentucky Division of Water on time in the future.

Violations 2018-9950439, 2018-9950440, 2019-9950445, 2019-9950446

Testing results showed that our system exceeded the standard, or maximum contaminant level (MCL), for trihalomethanes. The standard for trihalomethanes is 0.080 mg/L. It is determined by averaging all samples at each sampling location for the last 12 months. Trihalomethanes averaged at one of our system's locations for:

1/1/2018 through 3/31/2018 was 0.081 mg/L

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:

1/1/2018 through 3/31/2018 was 0.069 mg/L

7/1/2018 through 9/30/2018 was 0.067mg/L

10/1/2018 through 12/31/2018 was 0.065mg/L

We are working with our suppliers to minimize the formation of trihalomethanes and 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.

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.

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

Public notices were issued for each quarter we were out of compliance.

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.