

## **Clay Water Works 2019 Water Quality Report**

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Clay Water Works purchases water from Webster County Water District. The water district treats surface water from the Green River. A susceptibility analysis of the water supply at the intake indicates a moderate risk of contamination. There are some higher risk land use activities of concern which stem from the contaminant type, proximity to the intake and likelihood of release. These activities include oil production, pesticide & fertilizer application, wastewater discharges, landfills and fuel & chemical transportation by river and along roadways / rail that transect the watershed. Activities and land use within the watershed can pose potential risks to your drinking water. Under certain circumstances contaminants could be released that would pose challenges to water treatment or even get into your drinking water. These activities and how they are conducted, are of interest to our customers because they potentially affect your health and the cost of treating your water. The complete source water assessment can be reviewed at the Wester County Water District Office located at 478 U.S. Highway 41A S, Dixon, KY 42409.

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).

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.

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 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.**

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.**

**Regulated Contaminant Test Results WEBSTER COUNTY WATER DISTRICT (KY1170995)**

| Contaminant [code] (units)    | MCL | MCLG | Report Level | Range of Detection | Date of Sample | Violation | Likely Source of Contamination   |
|-------------------------------|-----|------|--------------|--------------------|----------------|-----------|--|
| <b>Inorganic Contaminants</b> |     |      |              |                    |                |           |  |
| Barium [1010] (ppm)           | 2   | 2    | 0.017        | 0.017 to 0.017     | May-19         | No        | Drilling wastes; metal refineries; erosion of natural deposits                     |
| Fluoride [1025] (ppm)         | 4   | 4    | 0.80         | 0.8 to 0.8         | May-19         | No        | Water additive which promotes strong teeth   |
| Nitrate [1040] (ppm)          | 10  | 10   | 1.07         | 1.07 to 1.07       | May-19         | No        | Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits |

**Disinfection Byproduct Precursor**

|   |     |     |                       |                               |      |    |                                   |
|---|-----|-----|-----------------------|-------------------------------|------|----|-----------------------------------|
| Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio) | TT* | N/A | 1.65 (lowest average) | 1.20 to 3.03 (monthly ratios) | 2019 | No | Naturally present in environment. |
|---|-----|-----|-----------------------|-------------------------------|------|----|-----------------------------------|

\*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) | 1 (positive samples) | 4 (no. of samples) | 2019 | No | Human and animal fecal waste |
|-----------------------------|---|------------------|----------------------|--------------------|------|----|------------------------------|

Cryptosporidium. We are required to monitor the source of your drinking water for Cryptosporidium in order to determine whether treatment at the water treatment plant is sufficient to adequately remove Cryptosporidium from your drinking water.

Cryptosporidium is a microbial pathogen found in surface water. Cryptosporidium was detected in one of four samples collected from the raw water source for our water system. 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.

**Other Constituents**

| Turbidity (NTU) TT * Representative samples                               | Allowable Levels   | 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*<br>Less than 0.3 NTU in 95% of monthly samples | 0.11                       | 100              | No        | Soil runoff                |

**Regulated Contaminant Test Results CLAY WATER WORKS (KY1170073)**

| Contaminant [code] (units)                                  | MCL      | MCLG      | Report Level           | Range of Detection                     | Date of Sample | Violation | Likely Source of Contamination            |
|---|----------|-----------|------------------------|--|----------------|-----------|---|
| <b>Disinfectants/Disinfection Byproducts and Precursors</b> |          |           |                        |  |                |           |   |
| Chlorine (ppm)  | MRDL = 4 | MRDLG = 4 | 0.86 (highest average) | 0.25 to 1.22                           | 2019           | No        | Water additive used to control microbes.  |
| HAA (ppb) (Stage 2) [Haloacetic acids]                      | 60       | N/A       | 65 (high site average) | 52.5 to 68 (range of individual sites) | 2019           | YES       | Byproduct of drinking water disinfection  |
| TTHM (ppb) (Stage 2) [total trihalomethanes]                | 80       | N/A       | 76 (high site average) | 51 to 89.5 (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 | 0.024 (90 <sup>th</sup> percentile) | 0.0015 to 0.0252 | Jul-17 | No | Corrosion of household plumbing systems |
| Lead [1030] (ppb) sites exceeding action level 0   | AL = 15  | 0   | 2 (90 <sup>th</sup> percentile)     | 0 to 7           | Jul-17 | No | Corrosion of household plumbing systems |

**Level 1 Assessment**

A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct one Level 1 assessment(s). One Level 1 assessment(s) were completed. In addition, we were required to take one corrective actions and we completed one of these actions.

**Violation: Haloacetic Acids**

We received four violations for exceeding the MCL for Haloacetic Acids (HAA). HAAs are a group of five haloacetic acid compounds which form when disinfectants react with natural organic matter in the water in the treatment process. Compliance for HAA is calculated on a quarterly annual average. The MCL for HAA is 0.060 mg/L. Our quarterly averages for 2019 are as follows; Jan-Feb was 0.065 mg/L, Apr-Jun was 0.064, Jul-Sep was 0.065 and Oct-Dec was 0.061 mg/L. We are taking steps to mitigate the problem by adopting a flushing program and working with our water provider; Webster County Water District minimize the formation of HAAs while ensuring adequate disinfection residual. We anticipate resolving the problem within 12 months.

**Health Effects:**

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

## **DRINKING WATER PUBLIC NOTIFICATION**

We are required to report monthly Total Coliform test results by the tenth day of the following month in which samples are collected. Results of routine bacteriological monitoring are an indicator of whether your drinking water meets health standards. During May 2018, we did not correctly report the results of monitoring for total coliform.

Our system failed to notify the state drinking water program as required by June 10, 2018. Although public health was not impacted, as our customers, you have a right to know what happened and what we did to correct the situation.

### **What should I do?**

There is nothing you need to do at this time. You do not need to boil your water or take other actions.

### **What happened and what is being done?**

On May 17, 2018 we were notified by our laboratory that the bacteriological sample that we collected the previous day tested positive for total coliform. We immediately collected three repeat samples and delivered them to the laboratory. The results were negative so, no further action was necessary on our part; that is until we received a violation. The Kentucky Division of Water (DOW) determined that the laboratory did not follow quality control/quality assurance protocol by identifying the repeat samples as specials and not routine. Ultimately, the water utility bears the responsibility even when the laboratory makes an error. While we did not notify the state as quickly as we should have, we have contacted the laboratory for a corrected copy and notified DOW on June 22, 2019. We are no longer in violation.

For more information, please contact Franklin Reinhard at 270-664-2444 or PO Box 425 Clay, KY 42404.

*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.*