

## 2018 Water Quality Report

Manager: Chris Mayhew  
Address: 300 West Main Street  
Meetings: 300 West Main Street

## Vine Grove Water Department

Contact: Daniel Brooks  
Vine Grove, Kentucky 40175  
1st Monday of each Month at 6:30 PM

KY0470440

Phone: (270) 877-2422

Our water is purchased from Hardin County Water District #1 (PWSID # KY0470393) which comes from The Pirtle Springs Water Treatment Plant and the Fort Knox Water Treatment Plant (PWSID # KY0470990). Hardin County Water District # 1 has two Karst, surface water sources for the Pirtle Springs Water Treatment Plant. They are Pirtle Springs and the head of Rough Springs. Fort Knox has two sources which includes 15 deep wells on the West Point Aquifer, these are classified as ground water. They also utilize a Mc Cracken Springs, a surface water source near Otter Creek. The sources of high potential impact include: underground storage tanks, agricultural, oil and gas wells, and septic systems. The Hardin County Water District # 1 has completed a source water determination plan which found both sources are under direct influence of surface water. Source water assessment information and a copy of the Fort Knox Annual Water Quality Report may be obtained from at (270) 624-5252. You can obtain these source water assessments from the Lincoln Trail Ad District located at 613 College Street Elizabethtown, Kentucky 42701 or call (270) 769-2393.

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, (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.

Variances & 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.

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.

**Vine Grove Water Department (VG) is served by: Hardin County Water District #1 (H1); Fort Knox (FK); Louisville Water Company (LW).**

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*	H1	0.093	100	No	Soil runoff
* Representative samples of filtered water	Less than 0.3 NTU in 95% monthly samples	FK	0.13	100	No	
		LW	0.09	100	No	

**Regulated Contaminant Test Results**

**Radioactive Contaminants**

Beta photon emitters (pCi/L)	50	0	FK	6.5	BDL to 6.5	No	2017	Decay of natural and man-made deposits
Alpha emitters [4000] (pCi/L)	15	0	FK	3.4	BDL to 3.4	No	2017	Erosion of natural deposits
Combined radium (pCi/L)	5	0	H1	1.3	1.3 to 1.3	No	2014	Erosion of natural deposits

**Inorganic Contaminants**

Barium [1010] (ppm)	2	2	H1	0.034	0.034 to 0.034	No	2018	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	VG	0.226 (90 <sup>th</sup> percentile)	0.033 to 0.323	No	Sept-16	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	H1 FK LW	0.5 0.65 0.7	0.5 to 0.5 0.6 to 0.7 0.3 to 1.2	No No No	2018 2018 2018	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	VG	3 (90 <sup>th</sup> percentile)	0 to 4	No	Sept-16	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	H1 FK LW	1.8 1.2 0.7	1.8 to 1.8 0.9 to 1.5 0.7 to 0.7	No No No	2018 2018 2018	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	H1 FK LW	2.32 2.81 1.4	1.18 to 3.87 1 to 4.87 1 to 1.97	No No No	2018 2018 2018	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.

Chloramines *** (ppm)	MRDL = 4	MRDLG = 4	VG	1.88 (highest average)	1.80 to 3.00	No	2018	Water additive used to control microbes.
Chlorine** (ppm)	MRDL = 4	MRDLG = 4	VG	1.88 (highest average)	1.20 to 2.10	No	2018	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	VG	47 (average)	17.4 to 54.8 (range of individual sites)	No	2018	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	VG	34 (average)	16 to 40 (range of individual sites)	No	2018	Byproduct of drinking water disinfection.

\*\* Our supplier used Chlorine from January-November 2018 / \*\*\* Our System switched to Chloramines in November 2018

Unregulated Contaminants (UCMR 4)		average	range (ppb)	date
Manganese	LW	1.6	0.6 to 2.4	2018
HAA6Br	LW	5.33	0.94 to 12.39	2018
HAA9	LW	27.54	3.48 to 60.03	2018
Manganese	FK	1.49	0.48 to 3.16	2018
HAA6Br	FK	2.14	0.905 to 4.07	2018
HAA9	FK	2.9	1.12 to 5.75	2018

**UCMR4 by Louisville an Fort Knox** 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.

**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. One Level 1 assessment was completed. In addition, we were required to take one corrective action and we completed one corrective action.

Our system found one sample site to be problematic and not representative. This sample site is no longer being utilized. Sampling procedures were also reviewed.

**This report will not be sent to individual customers. It will be available at City Hall.**