ANNUAL WATER QUALITY REPORT

Reporting Year 2018

Presented By

CLWSC Canyon Lake Shores

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (830) 312-4600.

PWS ID#: 0460019

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

From the General Manager

Please take a few minutes to review our 2018 Consumer Confidence Report (CCR). We are proud of our continuing effort to be good stewards of the environment and provide safe, potable water to the communities we serve. Canyon Lake Water Service Company (CLWSC) collects samples that are analyzed for numerous constituents, many of which are not represented in the report because they were not detected. Inside this report, you'll find the highest and lowest detected results of the sample analysis conducted in 2018.

As you review the Test Results data, keep in mind that many substances are detected at levels that vary throughout the year and at different locations. However, just because a substance is detected does not mean the water is unhealthy. Natural waters, including the sources used by CLWSC, contain a wide range of natural substances at levels that that are not harmful to human health. In fact, some of the minerals detected are essential for good health.

The water source is one of the primary factors that affect the levels of these substances detected. CLWSC supplies both groundwater and surface water to our customers. Generally, groundwater is harder and contains more natural minerals than surface water. On the other hand, surface water typically contains small levels of natural organic substances and requires treatment by filtration. Regardless of the source, regulations require that we disinfect the water with chlorine and maintain a minimum level of chlorine residual throughout the distribution system.

In 1996, the Safe Drinking Water Act was amended to require that every five years, the EPA issue a list of no more than 30 unregulated contaminants to be monitored by public water systems under the Unregulated Contaminant Monitoring Rule. Sample collection under the fourth iteration of the program, Fourth Unregulated Contaminant Monitoring Rule (UCMR4), began in 2018 and will conclude in 2020. You will see any detected results of these contaminants located in the Test Results section of this CCR.

Public Participation Opportunities

None scheduled at this time. To learn about future public meetings, please contact us at (830) 312-4600.

Important Health Information

While your drinking water meets the U.S. EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at (800) 426-4791.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please contact Chelsea Hawkins, Water Quality Specialist, at (830) 312-4600.

Substances That Could Be in Water

In order to ensure that tap water is safe to drink, the U.S. 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 that must provide the same protection for public health.

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 can be obtained by calling the EPA's Safe Drinking Water Hotline at (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 can pick up substances resulting from the presence of animals or from human activity.

> We remain vigilant in delivering the best-quality drinking water

Contaminants that may be present in source water include:

- Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic Contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive Contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on the taste, odor, or color of drinking water, please contact the system's business office at (830) 312-4600.

Water Treatment Process

The majority of the water provided to our Canyon Lake Shores System is produced at our CLWSC Canyon Lake Shores 6 million gallon per day (MGD) surface water treatment plant. Raw water is pumped from Canyon Lake reservoir through three 1,400 gallon per minute (gpm) pump stations.

As the water travels to our two 3 MGD ClariCone(R) clarifiers, the water is injected with alum and polymer as coagulants, and chlorine dioxide as a first level of disinfection to inactivate bacteria. The alum and polymer injection causes smaller particulates in the water to join together to form bigger particles, called a floc. The floc then becomes heavy and settles to the bottom of the clarifier or becomes captured in the clarifier blanket.

The settled water passes through three 2 MGD Granular Activated Carbon (GAC) filters. As the water leaves the filters, it is injected with a chlorine solution of mixed oxidants for final disinfection and allowed contact time in the storage tank prior to being pumped to the distribution system.

Lead in Home Plumbing

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. We are responsible for providing high quality drinking water, but we 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 at (800) 426-4791, or at http://www.epa.gov/safewater/lead.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not themselves pose health concerns, they can affect the taste, clarity, and color of the water. In addition, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at such times. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information.

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

Our Fluoride Levels

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system CLWSC Canyon Lake Shores has a fluoride concentration of 2.1 mg/L.

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

For more information, please call Chelsea Hawkins, Water Quality Specialist, at (830) 312-4600. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

Where Does My Water Come From?

CLWSC Canyon Lake Shores provides surface water from Canyon Lake Reservoir, located in Canyon Lake, Texas, and groundwater from the Trinity Aquifer.

SOURCE NAME/LOCATION	SOURCE WATER	TYPE OF WATER	REPORT STATUS	TCEQ SOURCE ID
Canyon Lake Island	Trinity Aquifer	Groundwater	Active	G0460019C
Canyon Lake Shores Treatment Plant	Canyon Lake Reservoir	Surface Water	Active	S0460019A
Cypress Springs	Trinity Aquifer	Groundwater	Active	G0460019U
Hancock Oak Hills	Trinity Aquifer	Groundwater	Active	G0460019AX
HEB Bulverde	Trinity Aquifer	Groundwater	Active	G0460019AD
Hillcrest	Trinity Aquifer	Groundwater	Active	G0460019H
Oakland Estates - Rancher's Circle	Trinity Aquifer	Groundwater	Active	G0460019AV
Oakland Estates - White Brook	Trinity Aquifer	Groundwater	Active	G0460019AW
Scenic Terrace	Trinity Aquifer	Groundwater	Active	G0460019F / G0460019G
Stallion Springs	Trinity Aquifer	Groundwater	Active	G0460019AF
Sybil Lightfoot Treatment Plant	Canyon Lake Reservoir	Surface Water	Active	S0460019B
Tamarack	Trinity Aquifer	Groundwater	Active	G0460019E
The Point	Trinity Aquifer	Groundwater	Active	G0460019I
The Summit Estates at Fischer	Trinity Aquifer	Groundwater	Active	G0460019AY / G0460019AZ

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: https://dww2.tceq.texas.gov/DWW/

Source Water Assessment

TCEQ completed an assessment of your source water, and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Consumer Confidence Report. For more information on source water assessments and protection efforts at our system, contact Chelsea Hawkins, Water Quality Specialist, at (830) 312-4600.

SYSTEM SUCEPTIBILITY SUMMARY

ASBESTOS	CYANIDE	METALS	MICROBIAL	MINERALS	RADIOCHEMICAL	SYNTHETIC ORGANIC CHEMICALS	DISINFECTION BYPRODUCT	VOLATILE ORGANIC CHEMICALS	DRINKING WATER CONTAMINANT CANDIDATE	OTHER
LOW	MEDIUM	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	LOW	MEDIUM	HIGH	LOW

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. Also, the water we deliver must meet specific health standards. Here, we show only those substances that were detected in our water. (A complete list of all our analytical results is available upon request.) Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

The percentage of Total Organic Carbon (TOC) removal was measured each month, and the system met all TOC removal requirements set.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2018	10	0	9.7	0–9.7	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2018	2	2	0.068	0.0196–0.068	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters[1] (pCi/L)	2018	50	0	12.1	0–12.1	No	Decay of natural and man-made deposits
Carbon Tetrachloride (ppb)	2016	5	0	0.5	0–0.5	No	Discharge from chemical plants and other industrial activities
Chlorine (ppm)	2018	[4]	[4]	1.52	0.3–2.5	No	Water additive used to control microbes
Chlorite (ppm)	2018	1	0.8	0.7	0–0.7	No	By-product of drinking water disinfection
Combined Radium (pCi/L)	2018	5	0	1.26	1.19–1.26	No	Erosion of natural deposits
Cyanide (ppb)	2017	200	200	20	0–20	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Di(2-ethylhexyl) Phthalate (ppb)	2017	6	0	2.1	0–2.1	No	Discharge from rubber and chemical factories
Dichloromethane (ppb)	2018	5	0	1.1	0–1.1	No	Discharge from pharmaceutical and chemical factories
Ethylbenzene (ppb)	2018	700	700	0.5	0–0.5	No	Discharge from petroleum refineries
Fluoride (ppm)	2018	4	4	2.1	0.20–2.1	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Gross Alpha excluding Radon and Uranium (pCi/L)	2018	15	0	6.2	0–6.2	No	Erosion of natural deposits
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	17	2.6–20.4	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	2.4	0.01–2.4	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2014	1	1	0.02	0–0.02	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2018	50	50	37.9	0–37.9	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes][2] (ppb)	2018	80	NA	68	8.8–85.2	No	By-product of drinking water disinfection
Toluene (ppm)	2016	1	1	0.0009	0–0.0009	No	Discharge from petroleum factories
Turbidity[3] (NTU)	2018	TT	NA	0.22	0.01–0.22	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff
Uranium (ppb)	2016	30	0	1.1	0–1.1	No	Erosion of natural deposits
Xylenes (ppm)	2018	10	10	0.0011	0–0.0011	No	Discharge from petroleum factories; Discharge from chemical factories

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2016	1.3	1.3	0.183	0/30	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead (ppb)	2016	15	0	2.7	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2018	200	NA	139	65.5–139	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2018	300	NA	254	14–254	No	Runoff/leaching from natural deposits
Copper (ppm)	2018	1.0	NA	0.0096	0.0024–0.0096	No	Corrosion of household plumbing systems; Erosion of natural deposits
Fluoride (ppm)	2018	2.0	NA	2.1	0.20–2.1	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Iron (ppb)	2018	300	NA	49	49–49	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2018	50	NA	1.3	1.3–1.3	No	Leaching from natural deposits
Sulfate (ppm)	2018	300	NA	172	13–172	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2018	1,000	NA	899	264–899	No	Runoff/leaching from natural deposits
Zinc (ppm)	2018	5	NA	0.0943	0.0052–0.0943	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES [4]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2018	27.5	1.1–27.5	Disinfection by-product
Bromoform (ppb)	2018	62	1.3–62	Disinfection by-product
Chloroform (ppb)	2018	24	1.1–24	Disinfection by-product
Dibromochloromethane (ppb)	2018	29	1.7–29	Disinfection by-product
Nickel (ppm)	2018	0.0113	0.0014–0.0113	Discharge from petroleum and metal refineries; Erosion of natural deposits
Sodium (ppm)	2018	188	10–188	Erosion of natural deposits
Tetrahdrofuran (ppb)	2018	344	12–344	Discharge from plastic and rubber factories

OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
2-Butanone (MEK) (ppb)	2017	11	0–11	Produced in outdoor air by the photo-oxidation of certain air pollutants, such as hydrocarbons
4-Methyl-2-pentanone (MIKB) (ppb)	2014	3.1	0–3.1	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Acetone (ppb)	2017	12	0–12	Created during the natural living and growing processes of plants and animals
Bicarbonate (ppm)	2018	346	191–346	Erosion of natural deposits
Bromochloroacetic Acid (ppb)	2018	7.6	1.2–7.6	Disinfection by-product
Calcium (ppm)	2018	98.1	44.7–98.1	Erosion of natural deposits
Dibromoacetic Acid (ppb)	2018	8.0	1.1–8.0	Disinfection by-product
Dichloroacetic Acid (ppb)	2018	9.9	1.0–9.9	Disinfection by-product
Diluted Conductance (µS/cm)	2018	1,750	489–1,750	Erosion of natural deposits
Lead (ppm)	2015	0.0011	0–0.0011	Corrosion of household plumbing systems; Erosion of natural deposits
Magnesium (ppm)	2018	47.5	16.5–47.5	Erosion of natural deposits
Monobromoacetic Acid (ppb)	2018	1.3	1–1.3	Disinfection by-product
Monochloroacetic Acid (ppb)	2018	2.8	2.8–2.8	Disinfection by-product
Phthalic Anhydride (ppb)	2017	3.6	0–3.6	Formed as an artifact during gas chromatographic analysis
Potassium (ppm)	2018	12.5	1.37–12.5	Erosion of natural deposits
Radium-226 (pCi/L)	2018	1.26	1.19–1.26	Erosion of natural deposit
Radium-228 (pCi/L)	2015	1.0	0–1.0	Erosion of natural deposit
Total Alkalinity [as CaCO3] (ppm)	2018	284	156–284	Erosion of natural deposits
Total Hardness (ppm)	2018	333	187–333	Erosion of natural deposits
Trichloroacetic Acid (ppb)	2018	2.3	1.3–2.3	Disinfection by-product

[1] The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

[2] Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their livers, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

[3] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

[4] Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SCL (Secondary Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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