# 2022 CONSUMER CONFIDENCE REPORT

Water System Name: **Lake Berryessa Resort Improvement District (LBRID)** Report Date: **June 14, 2023**

*We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 to December 31, 2022 and may include earlier monitoring data.*

**Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse Lake Berryessa Resort Improvement District a 707-253-4351 para asistirlo en español.**

| | |
|---|---|
| Type of water source(s) in use: | Surface Water, Creek |
| Name & general location of source(s): | Putah Creek, approximately ¼ mile south of the Water Treatment Facility. |
| Drinking Water Source Assessment information: | The Lake Berryessa Resort Improvement District monitors for contaminants in your drinking water according to Federal and State laws. The tables that follow show the results of our monitoring for the period January 1st to December 31st, 2022. Source water assessments are performed on a periodic basis by the State Water Resources Control Board, Division of Drinking Water Programs (formerly CDPH) as part of the Drinking Water Source Assessment Program (DWSAP). Finished water assessments are also performed periodically. Copies of both assessments are available at the LBRID administration office in downtown Napa.<br><br>All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk.<br><br>A Drinking Water Source Assessment was completed for the surface water source for the LBRID water system in March 2003 by CDPH and a Watershed Sanitary Survey was completed in 2018. If you would like a copy of the completed assessment or survey, please call the LBRID administration office in downtown Napa.<br><br>According to the assessment, your water source is most vulnerable to contamination from boats and personal watercraft, confirmed leaking underground fuel storage tanks, known contaminant plumes, historic and active gas stations, wastewater treatment plants, historic and active mining operations, and animal feeding operations. |
| Time and place of regularly scheduled board meetings for public participation: | The Napa County Board of Supervisors functions as the Governing Board of your Resort Improvement District. Regular meetings are held as needed, typically on Tuesdays when the Board of Supervisors is in session.<br><br>Should any member of the community wish to become more involved with District issues, or wish to receive regular updates on District issues, please contact the main office at 707-253-4351 to be directed to the appropriate staff person. |
| For more information, contact: | Annamaria Martinez, Assistant Engineer Phone: (707) 259-8378<br>Annamaria.martinez@countyofnapa.org |

**TERMS USED IN THIS REPORT**

**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.

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**Maximum Contaminant Level (MCL)**: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**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 are set by the U.S. Environmental Protection Agency (U.S. EPA).

**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.

**Primary Drinking Water Standards (PDWS)**: MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**Public Health Goal (PHG)**: The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

**Secondary Drinking Water Standards (SDWS)**: MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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

**Variances and Exemptions**: State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.

**ND**: not detectable at testing limit

**ppm**: parts per million or milligrams per liter (mg/L)

**ppb**: parts per billion or micrograms per liter (µg/L)

**ppt**: parts per trillion or nanograms per liter (ng/L)

**ppq**: parts per quadrillion or picogram per liter (pg/L)

**pCi/L**: picocuries per liter (a measure of radiation)

**Sources of Drinking Water and Contaminants that May Be Present in Source Water**

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.

**Contaminants that may be present in source water include:**

- *Microbial contaminants*, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides that* may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

- *Organic chemical contaminants,* including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants that* can be naturally-occurring or be the result of oil and gas production and mining activities.

**Regulation of Drinking Water and Bottled Water Quality**

In order to ensure that tap water is safe to drink, the U.S. EPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

**About Your Drinking Water Quality - Drinking Water Contaminants Detected**

Tables 1, 2, 3, 4, 5, 6, and 8 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old. Any violation of an AL, MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.

**TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA**

| Microbiological Contaminants (complete if bacteria detected) | Highest No. of Detections | No. of Months in Violation | MCL | MCLG | Typical Source of Bacteria |
|---|---|---|---|---|---|
| Total Coliform Bacteria (state Total Coliform Rule) | (In a mo.) 1 | 1 | 1 positive monthly sample | 0 | Naturally present in the environment |
| Fecal Coliform or *E. coli* (state Total Coliform Rule) | (In the year) 0 | 0 | A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or *E. coli* positive | | Human and animal fecal waste |
| *E. coli* (federal Revised Total Coliform Rule) | (In the year) 0 | 0 | (a) | 0 | Human and animal fecal waste |

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

**TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER**

| Lead and Copper | Sample Date | No. of Samples Collected | 90th Percentile Level Detected | No. Sites Exceeding AL | AL | PHG | No. of Schools Requesting Lead Sampling | Typical Source of Contaminant |
|---|---|---|---|---|---|---|---|---|
| Lead (ppm) | 9/9/2022 – 9/29/2022 | 6 | < 0.005 | 0 | 0.015 | 0.2 | Not applicable | Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits |
| Copper (ppm) | 9/9/2022 – 9/29/2022 | 6 | 0.755 | 0 | 1.3 | 0.3 | Not applicable | Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |

| TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical or Constituent** (and reporting units) | **Sample Date** | **Level Detected** | **Range of Detections** | **MCL** | **PHG (MCLG)** | **Typical Source of Contaminant** |
| Sodium (ppm) | 7/26/2022 | 21 | --- | none | none | Salt present in the water and is generally naturally occurring |
| Hardness (ppm) | 7/26/2022 | 300 | --- | none | none | Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring |

| TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical or Constituent** (and reporting units) | **Sample Date** | **Level Detected** | **Range of Detections** | **MCL [MRDL]** | **PHG (MCLG) [MRDLG]** | **Typical Source of Contaminant** |
| Aluminum (ppb) | 7/26/2022 | < 50 | --- | 1000 | 600 | Erosion of natural deposits; residue from some surface water treatment processes |
| Antimony (ppb) | 7/26/2022 | < 6 | --- | 6 | 20 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder |
| Arsenic (ppb) | 7/26/2022 | 2.8 | --- | 10 | 0.0004 | Erosion of natural deposits; runoff from orchards |
| Barium (ppb) | 7/26/2022 | < 100 | --- | 1000 | 2.0 | Erosion of natural deposits |
| Beryllium (ppb) | 7/26/2022 | < 1 | --- | 4 | 1 | Discharge from metal refineries, coal-burning factories, and electrical, aerospace, and defense industries |
| Cadmium (ppb) | 7/26/2022 | < 1.0 | --- | 5 | 0.04 | Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints |
| Chromium (ppb) | 7/26/2022 | < 1 | --- | 50 | 1.0 | Erosion of natural deposits |
| Fluoride (ppm) | 7/26/2022 | 0.10 | --- | 2.0 | 1.0 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| Mercury (ppb) | 7/26/2022 | < 1 | --- | 2 | 1.2 | Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland |
| Nickel (ppb) | 7/26/2022 | < 10 | --- | 100 | 12 | Erosion of natural deposits; discharge from metal factories |
| Nitrate (ppm) | 7/26/2022 | < 0.4 | --- | 10 | 2.0 | Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits |
| Selenium (ppb) | 7/26/2022 | < 5 | --- | 50 | 30 | Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive) |
| Thallium (ppb) | 7/26/2022 | < 1 | --- | 2 | 0.1 | Leaching from ore-processing sites; discharge from electronics, glass, and drug factories |

| DISINFECTION BYPRODUCTS (DBP) | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical or Constituent** | **Sample Date** | **Range of Detections** | **Final Running Annual Average** | **MCL** | **Highest Quarterly Running Average** | **Typical Source of Containment** |
| TTHM (ppb) * | Q 1 – 4 2022 | 30 - 64 | 47.25 | 80 | 102.22 | Byproduct of drinking water disinfection |
| HAA5 (ppb) * | Q 1 – 4 2022 | 11 - 39 | 21 | 60 | 165.24 | Byproduct of drinking water disinfection |
| Control of DBP Precursors (TOC) | 2022 (Monthly) | Met or exceeded the standards for the year. | | | | Various natural and manmade sources |

| TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical or Constituent** (and reporting units) | **Sample Date** | **Level Detected** | **Range of Detections** | **MCL** | **PHG (MCLG)** | **Typical Source of Contaminant** |
| Chloride (ppm) | 7/26/2022 | 20 | --- | 500 | N/A | Runoff/leaching from natural deposits |
| Color (color units) | 7/26/2022 | 10 | --- | 15 | N/A | Naturally occurring organic materials |
| Copper (ppb) | 7/26/2022 | < 50 | --- | 1000 | N/A | Erosion of natural deposits |
| Foaming Agents (MBAS) (ppm) | 7/26/2022 | < 0.05 | --- | 0.5 | N/A | Municipal and industrial waste discharges |
| Iron (ppb) | 7/26/2022 | < 100 | --- | 300 | N/A | Leaching from natural deposits; industrial wastes |
| Manganese (ppb) | 7/26/2022 | < 20 | --- | 50 | N/A | Leaching from natural deposits |
| Odor (TON)* | 7/26/2022 | 6 | --- | 3 | N/A | Naturally occurring organic materials |
| Silver (ppb) | 7/26/2022 | < 10 | --- | 100 | N/A | Runoff/leaching from natural deposits |
| Specific Conductance (umhos/cm) | 7/26/2022 | 580 | --- | 1600 | N/A | Runoff/leaching from natural deposits |
| Sulfate (ppm) | 7/26/2022 | 31 | --- | 250 | N/A | Runoff/leaching from natural deposits |
| Total Dissolved Solids (ppm) | 7/26/2022 | 320 | --- | 1000 | N/A | Runoff/leaching from natural deposits |
| Zinc (ppb) | 7/26/2022 | < 50 | --- | 5000 | N/A | Runoff/leaching from natural deposits |

| TABLE 6 – DETECTION OF UNREGULATED CONTAMINANTS | | | | | | |
|---|---|---|---|---|---|---|
| **Chemical or Constituent** (and reporting units) | **Sample Date** | **Level Detected** | **Range of Detections** | **MCL** | **PHG (MCLG)** | **Typical Source of Contaminant** |
| ***None Detected*** | | | | | | |

## Additional General Information on Drinking Water

- 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (1-800-426-4791).

- 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. U.S. EPA/Centers for Disease Control (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 (1-800-426-4791).

- The Lake Berryessa Resort Improvement District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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. 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 (1-800-426-4791) or at http://www.epa.gov/lead.

- This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2022. These revisions add the requirements of the federal Revised Total Coliform Rule, effective since April 1, 2016, to the existing state Total Coliform Rule. The revised rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The U.S. EPA anticipates greater public health protection as the rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system. The state Revised Total Coliform Rule became effective July 1, 2021.

## Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement

**TABLE 7 - VIOLATION OF A MCL, MRDL, AL, TT, OR MONITORING AND REPORTING REQUIREMENT**

| Violation | Explanation | Duration | Actions Taken to Correct the Violation |
|---|---|---|---|
| **1. Odor** | The raw water odor threshold was found at levels that exceeded the secondary MCL of 3 TON. | July 2022 | Treatment is performed on the raw water prior to distribution to customers to eliminate natural odor in raw water, and adjustments have been made to the treatment process to reduce the nuisance odors not removed during the treatment process. |
| HEALTH EFFECTS LANGUAGE FOR ODOR | Odor testing is a useful indicator of water quality even though water with odor testing results that are below the MCL is not necessarily safe to drink. Odor is also an indicator of the effectiveness of different kinds of treatment. As odor falls under secondary drinking water standards, it is not considered to present a risk to public health. The violation of the odor MCL in the raw water is from naturally occurring organic materials | | |

| | | | |
|---|---|---|---|
| **2. TTHM - Total Trihalomethanes** | The running annual average of quarterly TTHM sampling, exceeded the MCL of 80 ug/L for the first two quarters in 2022. | Quarters 1 & 2 2022 | • Operations staff conducts hydrant flushing year round to facilitate turnover of water in the system.<br>• Process control modifications occur continuously throughout the year to adapt to seasonal raw water quality changes to maximize removal of natural organic precursors during treatment.<br>• Installation of a mixing and aeration system for each tank is pending construction of the Tank 3 Replacement Project – scheduled to begin in summer 2023.<br>• Q1 and Q2 2022 sampling results were 30 and 37 ug/L respectively. |
| HEALTH EFFECTS LANGUAGE FOR TTHM | Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer. | | |
| **3. HAA5 - Total Haloacetic Acids** | The running annual average of quarterly HAA5 sampling, exceeded the MCL of 60 ug/L for the first two quarters in 2022. | Quarters 1 & 2 2022 | • Operations staff conducts hydrant flushing year round to facilitate turnover of water in the system.<br>• Process control modifications occur continuously throughout the year to adapt to seasonal raw water quality changes to maximize removal of natural organic precursors during treatment.<br>• Installation of a mixing and aeration system for each tank is pending construction of the Tank 3 Replacement Project – scheduled to begin in summer 2023.<br>• Q1 and Q2 2022 sampling results were 13 and 21 ug/L respectively. |
| HEALTH EFFECTS LANGUAGE FOR HAA5 | Some people who drink water containing Haloacetic Acids in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer. | | |
| **4. Total Coliform Detection** | In September 2022 routine testing in Zone 3 indicated the presence of Total Coliform Organisms. | September 2022 | Staff was notified of the presence of total coliforms within 24 hours after the sample was taken in September. Operators increased disinfection in the distribution system, began flushing the affected zone where the sample was taken to move the disinfectant through the system, and resampled within 24 hours of notification. All repeat samples were clear of total and fecal coliforms organisms. |
| HEALTH EFFECTS LANGUAGE FOR TOTAL COLIFORM ORGANISMS | 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.<br><br>As coliform occurs naturally in the environment it is important to note that a positive coliform test for a water system can be caused by true bacterial contamination of the water, or it can be caused by various external factors including erroneous sampling techniques, dirty sampling bottles, poorly disinfected sample taps, lab errors, etc. As all repeat sampling was negative for both total and fecal coliform organisms, the water system was not in violation of the MCL. | | |

**Description of Water Treatment Process -** Your water is treated by filtration and disinfection. Filtration removes particles suspended in the source water. Particles typically include clays and silts, natural organic matter, iron and manganese, and microorganisms. Your water is also treated by disinfection. Disinfection involves the addition of chlorine or other disinfectants to kill bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

| TABLE 8 - SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES | |
|---|---|
| Treatment Technique [a]<br>(Type of approved filtration technology used) | Immersed Membrane, Disinfection |
| Turbidity Performance Standards [b]<br>(that must be met through the water treatment process) | Turbidity of the filtered water must:<br>1 – Be less than or equal to 0.10 NTU in 95% of measurements in a month.<br>2 – Not exceed 2.0 NTU for more than eight consecutive hours.<br>3 – Not exceed 5.0 NTU at any time. |
| Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1. | 96.4% (September – Filter Train 2) |
| Highest single turbidity measurement during the year | 1.646 (09/06/2022 – Filter Train 2) |
| Number of violations of any surface water treatment requirements | 0 |

(a) A required process intended to reduce the level of a contaminant in drinking water.
(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

## Summary Information for Violation of a Surface Water TT

| TABLE 9 - VIOLATION OF A SURFACE WATER TT | | | | |
|---|---|---|---|---|
| **TT Violation** | **Explanation** | **Duration** | **Actions Taken to Correct the Violation** | **Health Effects Language** |
| No violations noted. | | | | |