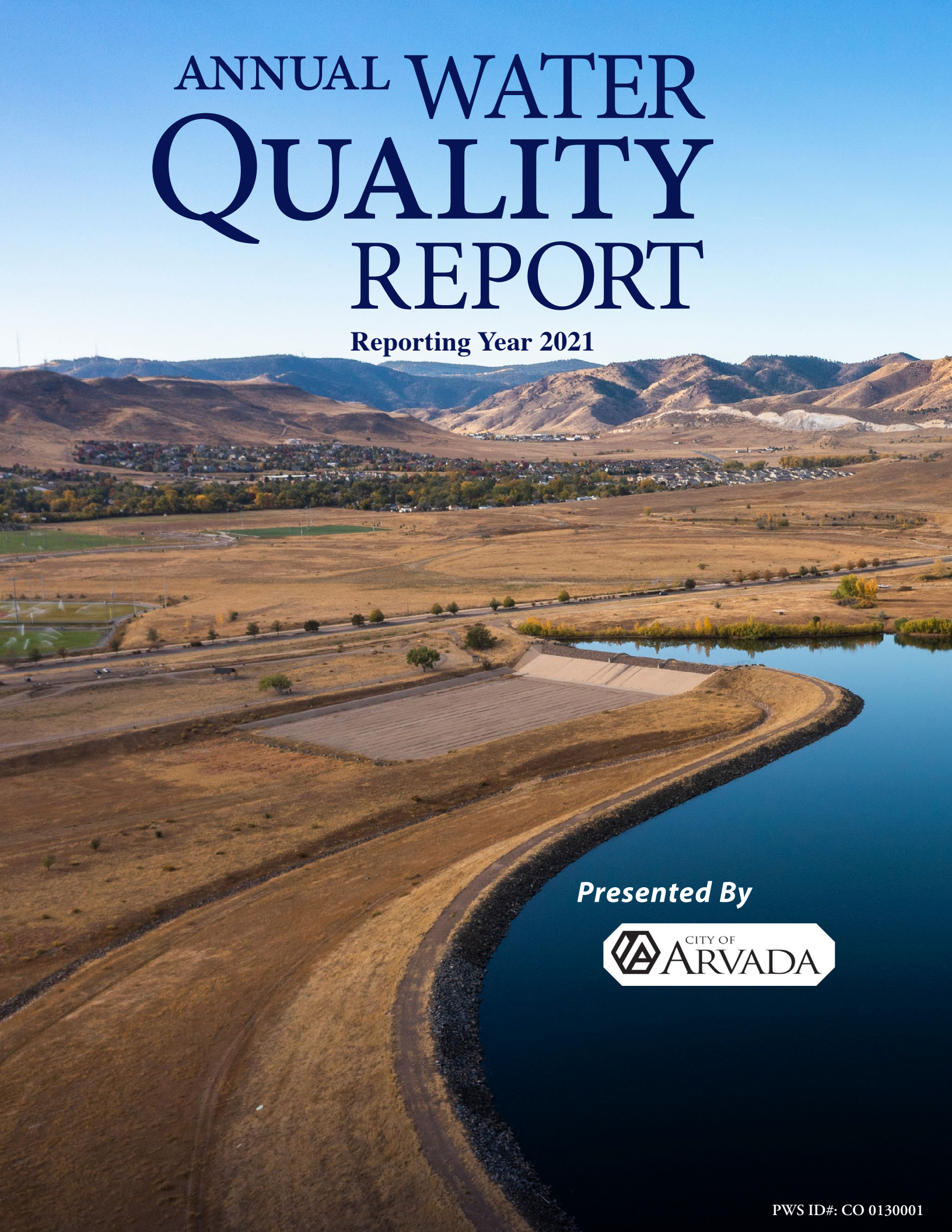
ANNUAL WATER QUALITY REPORT

Reporting Year 2021



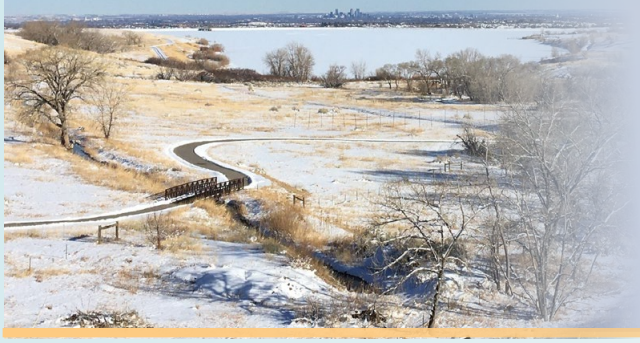
Presented By

CITY OF ARVADA

PWS ID#: CO 0130001

Esta es informaci'n importante. Si no la pueden leer, necesitan que alguien se le traduzca.

We are pleased to present you with this year's water quality report. This report covers the 2021 calendar year and provides important information about the quality of your drinking water. Our primary goal is to consistently provide our residents and other water users with a safe and dependable supply of drinking water. We want to ensure your confidence in us by providing information about where your water comes from, what it contains, and how it compares to strict state and federal drinking water standards. Please take the time to read it, and contact us with any questions you may have.



If you own or operate a facility that provides water to customers, employees, or tenants who do not receive a water bill directly, please post this link or provide copies of this report where it will be accessible to all. We want to make sure that everyone who relies on Arvada's water can view the report. Paper copies of the report are available upon request by contacting Water Quality at (720) 898-7800.

Thank you for allowing us to serve you!
Evelyn Rhodes, Water Quality Administrator

Important Health Information

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 Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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.

Source Water Assessment

The Colorado Department of Public Health and Environment completed a source water assessment for our system in 2007 (www.colorado.gov/cdphe/swap-assessment-phase. Search "Arvada"). The purpose of the assessment was to determine the susceptibility of our water sources to potential contamination. The assessment provides a screening-level evaluation of potential contamination that could occur; it does not mean that contamination has occurred or will occur. CDPHE has identified the following possible sources of contaminants for the City: EPA Superfund Sites; EPA Abandoned Contaminated Sites; EPA Hazardous Waste Generators; EPA Chemical Inventory/Storage Sites; EPA Toxic Release Inventory Sites; Permitted Wastewater Discharge Sites; Aboveground, Underground, and Leaking Storage Tank Sites; Solid Waste Sites; Existing/Abandoned Mine Sites; Other Facilities; Commercial/Industrial/Transportation; High Intensity Residential; Low Intensity Residential; Urban Recreational Grasses; Quarries/Strip Mines/Gravel Pits; Row Crops; Fallow; Pasture/Hay; Deciduous Forest; Evergreen Forest; Mixed Forest; Septic Systems; Oil/Gas Wells; Road Miles.

Cross-Connection Control and Backflow Prevention

Backflow is the reversed flow of potentially contaminated water into the City's distribution system through a cross-connection and is prohibited under state regulation. We ensure properly placed and functioning backflow prevention devices are located at any cross-connection in the City, excluding single-family residential connections. City or commercially owned backflow assemblies must be inspected and tested annually by a certified technician. For more information about Arvada's backflow prevention and cross-connection control program, call (720) 898-7793.

Questions?

For questions or additional information, contact:

Water Quality - Business Hours: (720) 898-7800
Water Quality - After Hours: (720) 898-7820
City of Arvada Main Line: (720) 898-7000
www.arvada.org, search Water Quality

Possible Sources of Contaminants

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

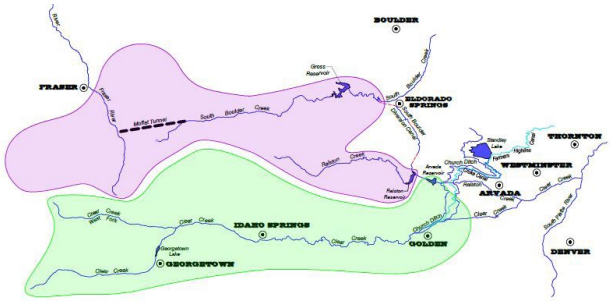
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases radioactive material, and substances resulting 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, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife; Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses; Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems; Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Service Line Inventory

The City has been creating an inventory of private-side (customer-owned) drinking water service lines. If you have a known or suspected galvanized or lead service line (typically only found in homes built before 1950), please contact Water Quality or email LCR@arvada.org. Visit Arvada.org/SLIProject for more information. Thank you!



Where Does My Water Come From?

Arvada's drinking water comes from two surface water sources: Denver Water's North System and Clear Creek. The North System is our primary year-round source and is delivered to the City's water treatment facilities from Denver Water's Ralston Reservoir. The source of this water is high-country snow melt collected from the Fraser River and South Boulder Creek basins, transported to Gross Reservoir, and then to Ralston Reservoir. The remaining 25 percent of the City's water supply is diverted from Clear Creek through a series of canals to the Arvada Reservoir.

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 two 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 www.epa.gov/safewater/lead.

2021 Detected Parameters

We routinely monitor your drinking water for many different parameters, including regulated parameters under state and federal laws. The following tables show detections found from January 1 to December 31, 2021, as well as any violations that may have occurred. Out of over 100 parameters tested in our drinking water, only those detected are listed below. Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to always keep all detects below their maximum allowed levels.

The state recommends monitoring for certain substances less 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.

REGULATED PARAMETERS

Finished Water Treatment Facilities

PARAMETERS (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Ralston Water Treatment Plant AVERAGE RESULT	Ralston Water Treatment Plant RANGE LOW-HIGH	Arvada Water Treatment Plant AVERAGE RESULT	Arvada Water Treatment Plant RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2021	15	0	0.7	0.4–1.6	0.73	ND–2.1	No	Erosion of natural deposits
Barium (ppm)	2021	2	2	0.024	0.017–0.032	0.033	0.032–0.034	No	Erosion of natural deposits
Combined Radium (pCi/L)	2021	5	0	1.6	0.7–2.4	2.4	1.7–3.4	No	Erosion of natural deposits
Fluoride (ppm)	2021	4	4	0.42	0.12–0.68	0.59	0.32–0.74	No	Erosion of natural deposits; water additive which promotes strong teeth
Total Organic Carbon (removal ratio)	2021	TT	NA	1.36	1.07–1.64	1.05	0.67–1.51	No	Naturally present in the environment
Turbidity (NTU)	2021	TT	NA	0.06	0.03–0.21	0.08	0.03–0.23	No	Soil runoff
Turbidity[1] (lowest monthly percent of samples meeting limit)	2021	TT = 95% of samples meet the limit	NA	100	NA	100	NA	No	Soil runoff
Uranium (ppb)	2021	30	0	ND	NA	0.3	ND–1	No	Erosion of natural deposits

Drinking Water Distribution System

PARAMETERS (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AVERAGE RESULT	RANGE LOW-HIGH	LRAA RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Disinfectant Residual (Chlorine-free) (ppm)	2021	[4]	[4]	0.92	0.32–1.36	NA	No	Water additive used to control microbes; minimum required residual is 0.2 mg/L
Haloacetic Acids [HAA5] (ppb)	2021	60	NA	20.7	14–31	16.5–25.8	No	By-product of drinking water disinfection
Total Trihalomethanes [TTHMs] (ppb)	2021	80	NA	32.8	22–48	26–38	No	By-product of drinking water disinfection

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

PARAMETERS (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AVERAGE RESULT (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2021	1.3	1.3	0.16	0/55	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2021	15	0	3.6	1/55	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

[1] Turbidity Treatment Technique (TT) is shown as the lowest monthly percentage of samples meeting the turbidity limit specified.

[2] Guidance from U.S. EPA recommends a level of 20 ppm in drinking water for individuals restricted to a total sodium intake of 500 mg/day.

SECONDARY PARAMETERS

PARAMETERS (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	RALSTON WATER TREATMENT PLANT AVERAGE RESULT	RALSTON WATER TREATMENT PLANT RANGE LOW-HIGH	ARVADA WATER TREATMENT PLANT AVERAGE RESULT	ARVADA WATER TREATMENT PLANT RANGE LOW-HIGH	POTENTIAL NOTICEABLE EFFECTS AT HIGH LEVELS
Aluminum (ppb)	2021	200	NA	0.014	ND–0.033	ND	NA	Colored water
Chloride (ppm)	2021	250	NA	13	4–26	27	25–28	Salty Taste
Manganese (ppb)	2021	50	NA	0.002	ND–0.004	0.007	ND–0.021	Brown water, staining, metallic taste
Sodium[2] (ppm)	2021	NA	NA	8.8	4.1–17	22	22–23	Salty taste noticeable >30 ppm
Sulfate (ppm)	2021	250	NA	27	18–44	40	37–43	Salty taste
Total Dissolved Solids [TDS] (ppm)	2021	500	NA	95	52–179	167	142–218	Hardness, deposits, salty taste
Total Hardness (ppm)	2021	NA	NA	54	33–85	88	74–122	Deposits, scale in pipes and on fixtures (typically >150 ppm)

Public Meetings

City of Arvada encourages public involvement and participation! City Council business meetings are generally held on the first and third Mondays of each month at 6:00 p.m. All council meetings are held at City Hall, 8101 Ralston Road, in the Council Chambers. Go to Arvada.org for more info.

Definitions

90th %ile: The value at which 90% of all other results are lower (or that 10% are higher). Used to determine compliance with the lead and copper action levels.

AL (Action Level): The concentration at which, if exceeded, triggers treatment or other requirements that the water system must follow.

Alpha Emitters: Gross alpha particle activity, includes radium-226 but excludes radon-222 and uranium.

LRAA (Locational Running Annual Average): Average results for samples taken at one particular location for the previous four calendar quarters. Compliance for TTHM and HAA5 are based on LRAA.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Set as close to the MCLG 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 know or expected risk to health, allowing for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. It does not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

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

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

Percentage: The percentage of samples that meet the TT requirement. In any month, at least 95% of turbidity samples must be less than 0.3 NTU.

ppb (µg/L): part per billion. One part substance per one billion parts water. Equivalent to one penny in $10,000,000; same as microgram per liter (µg/L).

ppm (mg/L): part per million. One part substance per million parts water. Equivalent to one penny in $10,000; same as milligram per liter (mg/L).

Removal Ratio: The ratio between the percentage of a substance actually removed (from raw to finished water) and the percentage of the substance required to be removed; a value of greater than 1 indicates the system is in compliance.

SMCL (Secondary Maximum Contaminant Level): Standards developed to protect aesthetic qualities of drinking water, not health based and not enforced.

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

Turbidity: The clarity or cloudiness of water, typically measured in NTU.

PFAS Monitoring

We tested for 12 common PFAS (perfluorinated alkyl substance) parameters in 2021 in both our source and finished waters. We are happy to report that none were detected. We plan to continue to voluntarily monitor for these unregulated parameters.