Letter to Water Customers

Dear Water Customers,

We are pleased to present you with this year's water quality report. This report covers the 2022 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 the Report 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!

Sincerely,

Evelyn Rhodes
Water Quality Administrator
For additional information, visit the City of Arvada’s new website ArvadaCo.Gov and search “Water Quality”

Public Participation
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 p.m. All Council meetings are held at City Hall, 8101 Ralston Road, in the Council Chambers. Go to ArvadaCo.Gov for more info.

Contact Information
For questions or additional information, contact:

Water Quality: 720-898-7800

Water Quality – After Hours: 720-898-7820

City of Arvada Main Line: 720-898-7000

Page 3

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 water 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 then to Ralston
Reservoir. The remaining 25% of the City’s water supply is diverted from Clear Creek through a series of canals to the Arvada Reservoir.

**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 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, 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 byproducts of industrial processes and petroleum production, and also may 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.

**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 or will occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future
contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provided a starting point for developing our source water protection plan (available on the City’s website). 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.

**Source Water Protection Plan**
For more information on Arvada’s Source Water Protection Plan and what you can do to help protect your source water, please visit the City’s website and search “Source Water Protection”.

**General Information**
All 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 800-426-4791 or by visiting epa.gov/ground-water-and-drinking-water. 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. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants, call the EPA Safe Drinking Water Hotline at 800-426-4791.
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. Arvada 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 (call Arvada Water Quality at 720-898-7800 for sampling information). 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 water.epa.gov/drink/info/lead.

**Service Line Inventory and Survey**
The City has been creating an inventory of private side (“customer owned”) drinking water service lines throughout the City. If you have a known or suspected Galvanized or Lead service line (typically only found in homes built before 1955) then please let us know! Please contact Water Quality or email LCR@arvada.org. Visit arvada.org/SLIProject for more information or to submit an online materials survey. Thank you!
PFAS Sampling in 2022
PFAS are per- and poly-fluoro alkyl substances; please visit arvada.org for more PFAS information and specific results (updated periodically). Arvada Water Quality started voluntarily monitoring for some PFAS compounds in 2021. To date, we have found no detections of any of the compounds tested for in either of our finished waters. Arvada will also be participating in the nationwide UCMR5 testing in 2023 which will include 29 PFAS parameters.

Cross-Connection Control & 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 commercial 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.

New Arvada Water Treatment Plant Siting Study
We are getting a new water treatment plant! As part of our commitment to provide our residents with excellent and safe drinking water, we are replacing much of our aging infrastructure – including the Arvada Water Treatment Plant. Please visit arvadasitingstudy.com to learn more about the process! We’ll continue to share information with you and gather feedback throughout the design and build process, so please keep checking back for updates!

Definitions for Data Tables
90th %ile - 90th percentile. 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.


LRAA - Locational Running Annual Average. Average results for samples taken at one particular location, for the previous four calendar quarters. Compliance for TTHMs and HAA5s 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 known 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; do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NTU - Nephelometric Turbidity Units. Measurement of the clarity (turbidity) of water. 5 NTU is just visible 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 - 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 - part per million. One part substance per one million parts water. Equivalent to one penny in $10,000. Same as milligram per liter (mg/L).

ppt - part per trillion. One part substance per one trillion parts water. Equivalent to one penny in $10,000,000,000. Same as nanogram per liter (ng/L).

ratio - 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; measured in NTUs. Turbidity has no health effects, but can interfere with treatment and provide a medium for microbial growth.
2022 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, 2022 (unless otherwise noted), as well as any violations that may have occurred. Out of over 100 parameters tested for in our drinking water, only detected parameters are listed below. Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to always keep any detections below their maximum or recommended levels.

The first table displays Regulated Parameters that have been detected, starting with parameters sampled at our treatment plants, known as finished water; followed by parameters sampled out in the distribution system. The second table displays unregulated or secondary parameters, sampled at our treatment plants. Definitions of acronyms and other terms are included in the definitions table preceding this section.

Data from Table 1a, parameters detected in the finished water.

Gross alpha emitters come from the erosion of natural deposits. They were detected at Ralston Water Treatment Plant at a range of 0-1.2 picocuries per liter, with an average of 0.58. Gross alpha emitters were detected at Arvada Water Treatment Plant at a range of 0-0.9 picocuries per liter, with an average of 0.45. Gross alpha emitters have an MCL of 15 and an MCLG of 0, picocuries per liter. There were no violations of this parameter.

Combined radium comes from the erosion of natural deposits. It was detected at Ralston Water Treatment Plant at a range of 0.5-1.6 picocuries per liter, with an average of 1.1. Combined radium was detected at Arvada Water Treatment Plant at a range of 0.6-1.1 picocuries per liter, with an average of 0.85. Combined radium has an MCL of 5 and an MCLG of 0, picocuries per liter. There were no violations of this parameter.

Uranium comes from the erosion of natural deposits. It was not detected at Ralston Water Treatment Plant or at Arvada Water Treatment Plant. Uranium has an MCL of 30 and an MCLG of 0, parts per billion. There were no violations of this parameter.

Toluene comes from the byproducts of petroleum-containing materials. It was detected at Ralston Water Treatment Plant at a range of 0-0.0007 parts per million, with an average of 0.0002. Toluene was detected at Arvada Water Treatment Plant at a range of 0.0-0.0 parts per million, with an average of 0.0. Uranium has an MCL of 1 and an MCLG of 1 parts per million. There were no violations of this parameter.

Total Xylenes come from the byproducts of petroleum-containing materials. It was detected at Ralston Water Treatment Plant at a range of 0-1.5 parts per billion with an average of 0.5 parts per billion. Total Xylenes were detected at Arvada Water Treatment Plant at a range of 0-1.0 parts per billion with an average of 0.33 parts per billion. Total Xylenes has an MCL of 10000 and an MCLG of 10000 parts per billion. There were no violations of this parameter.

Arsenic comes from the erosion of natural deposits. It was detected at Ralston Water Treatment Plant at a range of 0-0 parts per billion with an average of 0 parts per billion. Arsenic was
detected at Arvada Water Treatment Plant at a range of 0-1.4 parts per billion with an average of 0.47 parts per billion. Arsenic has an MCL of 10 and an MCLG of 0 parts per billion. There were no violations of this parameter.

Barium comes from the erosion of natural deposits. It was detected at Ralston Water Treatment Plant at a range of 0.017-0.037 parts per million with an average of 0.025 parts per million. Barium was detected at Arvada Water Treatment Plant at a range of 0.022-0.026 parts per million with an average of 0.024 parts per million. Barium has an MCL of 2 and an MCLG of 2 parts per million. There were no violations of this parameter.

Fluoride comes from the erosion of natural deposits and is an additive to promote strong teeth. It was detected at Ralston Water Treatment Plant at a range of 0.14-0.64 parts per million with an average of 0.49 parts per million. Fluoride was detected at Arvada Water Treatment Plant at a range of 0.33-0.60 parts per million with an average of 0.47 parts per million. Fluoride has an MCL of 4 and an MCLG of 4 parts per million. There were no violations of this parameter.

Nitrate comes from the erosion of natural deposits. It was detected at Ralston Water Treatment Plant at a range of 0-0 parts per million with an average of 0 parts per million. Nitrate was detected at Arvada Water Treatment Plant at a range of 0-0.15 parts per million with an average of 0.05 parts per million. Nitrate has an MCL of 10 and an MCLG of 10 parts per million. There were no violations of this parameter.

Total Organic Carbon is naturally present in the environment. It was measured at Ralston Water Treatment Plant at a range of 1.08-1.67 ratio of removal from raw to finished water with an average of 1.39 removal ratio. Total Organic Carbon was measured at Arvada Water Treatment Plant at a range of 1.24-1.69 ratio of removal from raw to finished water with an average of 1.50 removal ratio. Total Organic Carbon has a Treatment Technique level of 1 removal ratio and no MCLG. There were no violations of this parameter.

Turbidity comes from soil runoff. It was measured at Ralston Water Treatment Plant at a range of 0.03-0.21 nephelometric turbidity units with an average of 0.04 nephelometric turbidity units. Turbidity was measured at Arvada Water Treatment Plant at a range of 0.03-0.29 nephelometric turbidity units with an average of 0.08 nephelometric turbidity units. Turbidity has a Treatment Technique level of 1 NTU and no MCLG. There were no violations of this parameter.

Data from Table 1b, parameters detected in the distribution system.

Free Chlorine is an additive used to control microbes, the minimum required residual is 0.2 mg/L. It was measured throughout the distribution system at a range of 0.31-1.41 parts per million with an average of 0.95 parts per million. Free Chlorine has an MRDL of 4 and an MRDLG of 4 parts per million. There were no violations of this parameter.

Haloacetic Acids come from the byproducts of drinking water disinfection. They were measured throughout the distribution system with a locational average range of 16.7-26.1 parts per billion and an overall average of 21.6 parts per billion. Haloacetic Acids have an LRAA limit of 60 parts per billion and no MCLG. There were no violations of this parameter.
Total Trihalomethanes come from the byproducts of drinking water disinfection. They were measured throughout the distribution system with a locational average range of 28.4-39.9 parts per billion and an overall average of 34.8 parts per billion. Total Trihalomethanes have an LRAA limit of 80 parts per billion and no MCLG. There were no violations of this parameter.

Lead comes from corrosion of household plumbing, including fittings and fixtures. It was measured at specific residential taps in the city in 2021 with a 90th percentile value of 3.6 parts per billion. There was 1 household that exceeded the action level out of 55 homes sampled. Lead has an Action Level of 15 parts per billion. There were no violations of this parameter.

Copper comes from corrosion of household plumbing, and erosion of natural deposits. It was measured at specific residential taps in the city in 2021 with a 90th percentile value of 0.16 parts per million. There were 0 households that exceeded the action level out of 55 homes sampled. Copper has an Action Level of 1.3 parts per million. There were no violations of this parameter.

Data from Table 2, these parameters are not regulated, but we test them for general or aesthetic reasons. This info may be useful for items like fish tanks or home brewing.

Alkalinity has a recommended minimum level of 10 parts per million to prevent plumbing corrosion. It was measured at Ralston Water Treatment Plant at a range of 18-46 parts per million with an average of 28 parts per million. Alkalinity was measured at Arvada Water Treatment Plant at a range of 21-45 parts per million with an average of 34 parts per million.

Aluminum has a Secondary MCL of 0.2 parts per million to prevent discolored water. It was measured at Ralston Water Treatment Plant at a range of 0-0.027 parts per million with an average of 0.015 parts per million. Aluminum was measured at Arvada Water Treatment Plant at a range of 0.02-0.064 parts per million with an average of 0.036 parts per million.

Chloride has a Secondary MCL of 250 parts per million to prevent salty taste. It was measured at Ralston Water Treatment Plant at a range of 6-21 parts per million with an average of 11 parts per million. Chloride was measured at Arvada Water Treatment Plant at a range of 11-16 parts per million with an average of 14 parts per million.

Total Manganese has a Secondary MCL of 0.05 parts per million to prevent red or brown water, staining, or metallic taste. It was measured at Ralston Water Treatment Plant at a range of 0-0.003 parts per million with an average of 0.001 parts per million. Total Manganese was measured at Arvada Water Treatment Plant at a range of 0.003-0.045 parts per million with an average of 0.021 parts per million.

pH has a recommended minimum level of 7.0 standard units to prevent plumbing corrosion. It was measured at Ralston Water Treatment Plant at a range of 7.32-7.80 standard units with an average of 7.56 standard units. pH was measured at Arvada Water Treatment Plant at a range of 7.22-7.75 standard units with an average of 7.55 standard units.

Sodium has an EPA recommended limit of 20 parts per million in drinking water for individuals on a sodium restricted diet. It was measured at Ralston Water Treatment Plant at a range of 4-15 parts per million with an average of 8 parts per million. Sodium was measured at Arvada Water Treatment Plant at a range of 8-16 parts per million with an average of 10 parts per million.
Water Treatment Plant at a range of 9-15 parts per million with an average of 12 parts per million.

Sulfate has a Secondary MCL of 250 parts per million to prevent salty taste. It was measured at Ralston Water Treatment Plant at a range of 14-43 parts per million with an average of 24 parts per million. Sulfate was measured at Arvada Water Treatment Plant at a range of 22-38 parts per million with an average of 28 parts per million.

Total Dissolved Solids has a Secondary MCL of 500 parts per million to prevent scale, deposits, or salty taste. It was measured at Ralston Water Treatment Plant at a range of 53-149 parts per million with an average of 88 parts per million. Total Dissolved Solids was measured at Arvada Water Treatment Plant at a range of 61-162 parts per million with an average of 124 parts per million.

Total Hardness greater than 100 parts per million can cause excessive deposits or scale in pipes and fixtures. It was measured at Ralston Water Treatment Plant at a range of 31-87 parts per million with an average of 50 parts per million. Total Hardness was measured at Arvada Water Treatment Plant at a range of 34-71 parts per million with an average of 58 parts per million.