CITY OF ARVADA

2023 ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2022

CO0130001

Dear Water Customers,

Esta es información 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 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

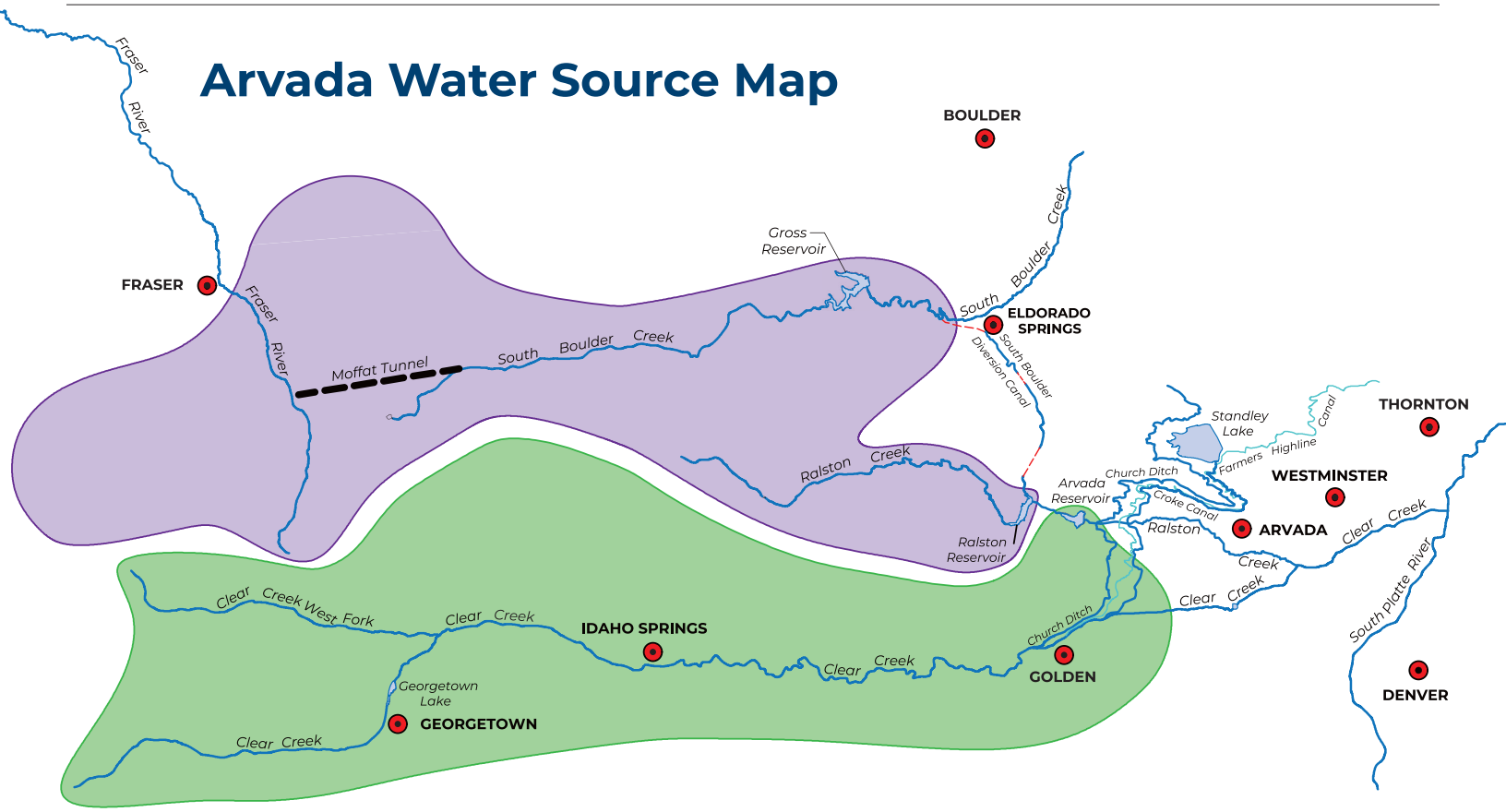
For questions or additional information, contact:

Water Quality: **720-898-7800**

Water Quality – After Hours: **720-898-7820**

City of Arvada Main Line: **720-898-7000**

Arvada Water Source Map



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.

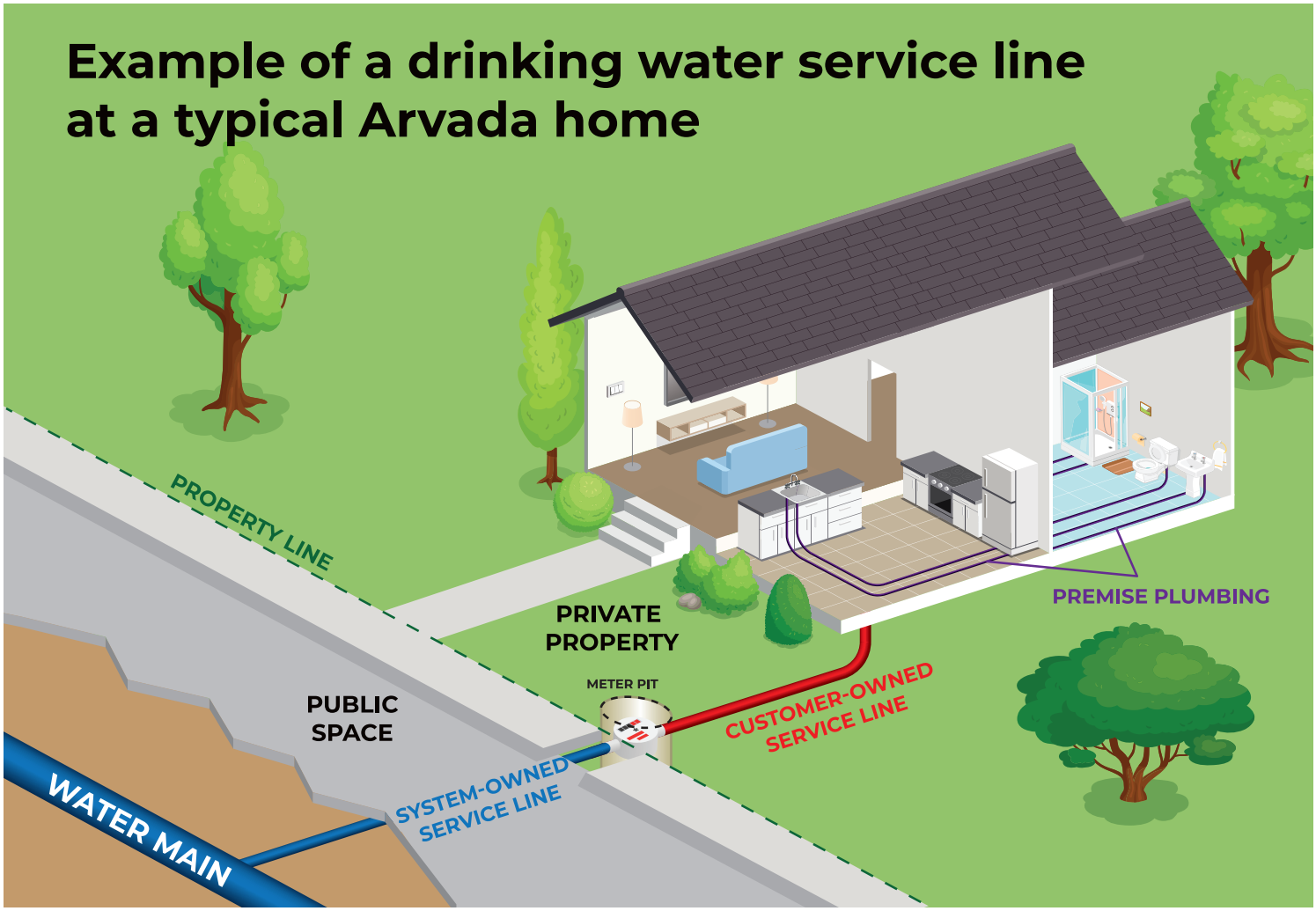
Source Water Assessment
The Colorado Department of Public Health and Environment completed a Source Water Assessment for our system in 2007 **(www.colorado.gov/cdphe/swap-assessment-phase. Search "Arvada").** The purpose of the assessment was to determine the susceptibility of our water sources to potential 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
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 and removing any remaining lead (and possibly galvanized) service lines, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes by running your cold tap for several minutes or until it is noticeably colder (you can collect the excess tap water in a container to water your plants). Taking a shower, doing laundry or a load of dishes can also help to flush your pipes, especially if you haven't been home for an extended amount of time. You can also use a point-of-use or pitcher filter that is certified by an American National Standards Institute (ANSI) accredited certifier to reduce lead in drinking water; but make sure to maintain it according to instructions. If you are concerned about lead in your water and wish to have your water tested, contact Arvada Water Quality at **720-898-7800.** Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at **epa.gov/safewater/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 **ArvadaCO.gov/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 **ArvadaCO.gov** 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.

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 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 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; 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 all detections below their maximum or recommended levels.

Regulated Parameters

Finished Water (at Treatment Plants) — *We sample many parameters at our water treatment plants (WTP) throughout the year, some several times a day!*

				Ralston WTP		Arvada WTP			
Parameter	**Unit**	**MCL [TT]**	**MCLG**	**Average Result**	**Range Low-High**	**Average Result**	**Range Low-High**	**Violation?**	**Typical Source**
Alpha Emitters	pCi/L	15	0	0.58	0-1.2	0.45	0-0.9	No	Erosion of natural deposits
Combined Radium	pCi/L	5	0	1.1	0.5-1.6	0.85	0.6-1.1	No	Erosion of natural deposits
Uranium	ppb	30	0	0	0-0	0	0-0	No	Erosion of natural deposits
Toluene	ppm	1	1	0.0002	0-0.0007	0	0-0	No	Byproduct of petroleum-containing materials
Total Xylenes	ppb	10000	10000	0.5	0-1.5	0.33	0-1.0	No	Byproduct of petroleum-containing materials
Arsenic	ppb	10	0	0	0-0	0.47	0-1.4	No	Erosion of natural deposits
Barium	ppm	2	2	0.025	0.017-0.037	0.024	0.022-0.026	No	Erosion of natural deposits
Fluoride	ppm	4	4	0.49	0.14-0.64	0.47	0.33-0.60	No	Erosion of natural deposits; Additive to promote strong teeth
Nitrate	ppm	10	10	0	0-0	0.05	0-0.15	No	Erosion of natural deposits
Total Organic Carbon [TOC]	ratio	[1]	N/A	1.39	1.08-1.67	1.50	1.24-1.69	No	Naturally present in the environment
Turbidity	NTU	[1]	N/A	0.04	0.03-0.21	0.08	0.03-0.29	No	Soil runoff
Turbidity[1]	percentage	[95%]	N/A	100	N/A	100	N/A	No	Soil runoff

Distribution System — *We sample several parameters throughout our water distribution system, year round.*

Parameter	**Unit**	**MCL [MRDL]**	**MCLG [MRDLG]**	**Average Result**	**Range Low-High**	**LRAA Range Low-High**	**Violation?**	**Typical Source**
Chlorine [Free]	ppm	[4]	[4]	0.95	0.31-1.41	N/A	No	Additive used to control microbes, minimum required residual is 0.2 mg/L
Haloacetic Acids [HAA5]	ppb	60	N/A	21.6	12.0-33.0	16.7-26.1	No	Byproduct of drinking water disinfection
Total Trihalomethanes [TTHM]	ppb	80	N/A	34.8	25.0-50.8	28.4-39.9	No	Byproduct of drinking water disinfection

Customer Taps (from 2021) — *We sample certain residential households periodically as required to observe lead and copper corrosion.*

Parameter	**Unit**	**AL**	**90th %ile Result**	**# Above AL**	**Sample Size**	**Violation?**	**Typical Source**
Lead	ppb	15	3.6	1	55	No	Corrosion of household plumbing, including fittings & fixtures
Copper	ppm	1.3	0.16	0	55	No	Corrosion of household plumbing; Erosion of natural deposits

Secondary & Unregulated Parameters

Finished Water (at Treatment Plants) — *Many 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.*

			Ralston WTP		Arvada WTP		
Parameter	**Unit**	**SMCL [Rec]**	**Average Detected**	**Range Low-High**	**Average Detected**	**Range Low-High**	**Potential Noticeable Effects at High Levels**
Alkalinity	ppm	[>10]	28	18-46	34	21-45	Minimum recommended to prevent plumbing corrosion
Aluminum	ppm	0.2	0.015	0-0.027	0.036	0.02-0.064	Discolored water
Chloride	ppm	250	11	6-21	14	11-16	Salty taste
Total Manganese	ppm	0.05	0.001	0-0.003	0.021	0.003-0.045	Red/brown water, staining, metallic taste
pH	SU	[>7.0]	7.56	7.32-7.80	7.55	7.22-7.75	Minimum recommended to prevent plumbing corrosion
Sodium[2]	ppm	[20]	8	4-15	12	9-15	Salty taste noticeable greater than 30 ppm
Sulfate	ppm	250	24	14-43	28	22-38	Salty taste
Total Dissolved Solids [TDS]	ppm	500	88	53-149	124	61-162	Hardness, deposits, salty taste
Total Hardness	ppm	N/A	50	31-87	58	34-71	Deposits, scale in pipes and on fixtures (typically greater than 150 ppm)

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

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