City of Santa Barbara

JUNE 2023

ANNUAL WATER QUALITY REPORT

SantaBarbaraCA.gov/Water

MESSAGE FROM THE WATER RESOURCES MANAGER

The impacts of a changing climate continue to make their mark on our community. California experienced one of the wettest winters on record, with local rain totals topping 60 inches and snowfall in the Sierra Nevada's breaking historical records at over 700 inches! Reservoirs and rivers across the State are full and flowing at capacity. Major flooding in the San Joaquin Valley has already started and is only anticipated to get worse as the snow melt continues. Such events are occurring both locally and globally, and Santa Barbara is not immune. Preparing for extreme weather requires community preparation and continued investment in infrastructure.

Whether the threat is floods, sea level rise, droughts, or wildfires, the City continues to position itself to respond to a myriad of natural disasters. While we cannot control the weather, we can prepare and plan to protect our community. I am optimistic about the security of the City's water resources, and I am confident the City is well positioned to meet the challenges ahead. The City has developed one of the most diverse water supplies in the State and continues to make smart and innovative investments in our treatment plants and distribution system that will serve us well in a disaster. The strong commitment of our community and elected officials to lead the way in sustainability and resiliency will enable us to meet the challenges of a changing climate. To stay informed and learn more about the City's investment in its Water Resources, please visit our website at SantaBarbaraCA.gov/Water.

Natural Disasters that have impacted potable water operations in the past ten years in Santa Barbara are as follows: Ray Fire, Whitter Fire, Tea Fire, Jesusita Fire, Thomas Fire, Drought: 2011-2023, Montecito Debris Flows, Covid Pandemic and the January 9, 2023 Storm Event.

Sincerely,
Joshua Haggmark, Water Resources Manager

COMMUNITY PARTICIPATION

For questions about water quality, contact the Water Resources Laboratory at WaterLab@SantaBarbaraCA.gov or call 805-568-1008.

For questions on the City's water system, call 805-564-5387.

The City of Santa Barbara Water Commission meets at 9:00 AM on the third Thursday of each month. For more information on the Water Commission, visit SantaBarbaraCA.gov/WC.

SantaBarbaraCA.gov/Water

ONE WATER
CITY OF SANTA BARBARA

A full Lake Cachuma, February 2023.
The last time Cachuma was full was in 2011.

Photo courtesy of Jasmine Showers

Rain! Rain! What Does All of This Rain Mean for the City's Water Supply?

Significantly above-average rainfall has been recorded both locally and across the state since January. Through the end of March, rainfall recorded at the City's Gibraltar Reservoir, located in the Santa Ynez mountains, is 220% of average and rainfall in the City itself is 185% of average. Similarly, snowpack in the Sierras, which is a major source of water for California's State Water Project (SWP), is breaking historical records in some locations at over 200% of average.

All of this rain is great news for Santa Barbara's water supply. The City has enough water to meet projected demands for at least the next three years, even if the next several winters are dry and drought conditions return. Both Gibraltar Reservoir and Lake Cachuma are full. These reservoirs can provide 80% and 45% of the City's total annual water demand, respectively. As of March 24th the SWP allocation is 75%, which gives the City 2,475 acre-feet, or about 25% of annual demand, in SWP water. The City also continues to produce desalinated water and recycled water, both drought-proof supplies. These sources offset the need to bring surface water down from Lake Cachuma, allowing the City to store its Cachuma allocation in the lake for future dry years. Another benefit to the above average rainfall this year is that the City was able to turn off all groundwater pumping while relying on other sources. Local groundwater plays an important role during droughts, and it will take several consecutive wet years like this one for the groundwater basins to fully recover.

While the City's water supply situation appears to be secure for the next several years, it is still important to use our water resources efficiently. In California, the next stretch of drought conditions can always be right around the corner, and climate change makes it more difficult to predict future rainfall and water supply availability. Santa Barbara water customers have embraced water conservation as a way of life. The City's water consumption is currently the same as it was in the 1950's, with more than double the population. Keep up the good work!

In 2022, the City of Santa Barbara's water met all EPA and state drinking water health standards. Before distribution, drinking water from our primary water sources is treated at the Cater Water Treatment Plant or the Charles E. Meyer Desalination Plant. Groundwater is treated at the Ortega Groundwater Treatment Plant or at the individual well site.

Drinking Water Treatment Regulations

Most of the City's drinking water comes from Lake Cachuma, Gibraltar Reservoir, and the Charles E. Meyer Desalination Plant. A portion of the City's water also comes from groundwater and imported State Water sources. As water travels over 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 the water sources include:

- Microbial contaminants such as bacteria and viruses that may come from wildlife or human activity.
- Inorganic contaminants such as salts and metals that can be naturally occurring or result from human activities.
- Radioactive contaminants, which can be naturally occurring.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm-water run-off, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are by-products of industrial processes, petroleum production and use, or septic systems and agricultural applications.

To ensure safe drinking water, federal and state regulations limit the amount of certain contaminants in public water systems. Regulations also establish limits for contaminants in bottled water to provide protection for public health.

Special Information Available

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 people, and infants can be particularly at risk of infection. 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 at 1-800-426-4791.

With Lake Cachuma at capacity, there are sufficient water for at least the next three years, even if another prolonged drought occurs.

Photo courtesy of Lael Wageneck, County of Santa Barbara

Limited Potential for Contamination

The City has evaluated the vulnerability of its water supplies. Gibraltar Reservoir's remote location and restricted access limits opportunities for contamination. Water contact activities at Lake Cachuma are prohibited. The Desalination Plant and Cater Plant use advanced treatment technologies. City groundwater supplies are located deep beneath the surface. Nevertheless, contaminants from sources such as gas stations and dry cleaners could potentially reach City water supplies. All water sources are carefully monitored to ensure pollutants do not exceed state and federal standards. For more information, call the City's Water Resources Laboratory at 805-568-1008.

Lead in Plumbing

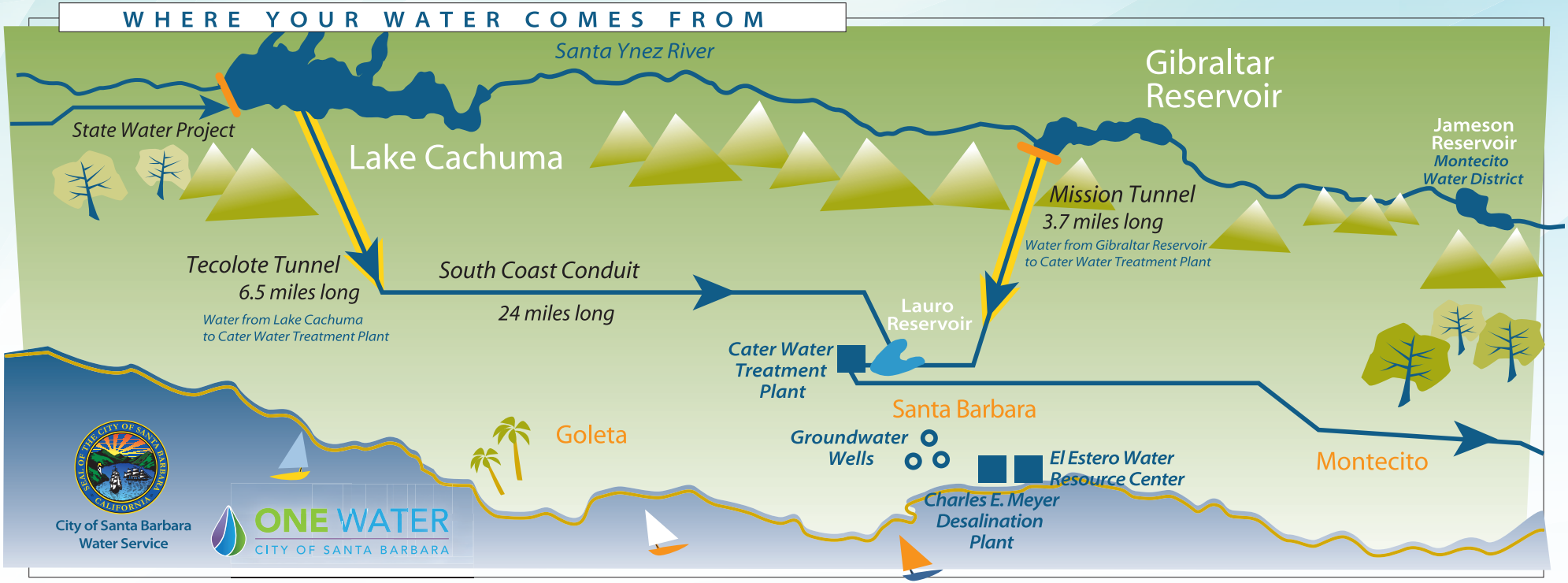
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with private service lines and home plumbing. The City has no lead service lines in the water distribution system. The City is responsible for providing high-quality drinking water but cannot control the variety of materials used in private plumbing components. The City's water contains low levels of lead and copper. However, if your water has been sitting in your pipes for a number of days, you can minimize lead exposure by flushing your tap for 30 seconds before using the water for drinking or cooking. Additionally, 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 1-800-426-4791, or EPA.gov/SafeWater/Lead.

Nitrate Levels

The City's highest nitrate level in 2022 was 4.4 mg/L. Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness. Symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask for advice from your health care provider.

Water Quality Tests

To ensure the delivery of quality drinking water that is free of harmful bacteria, water quality tests are performed weekly at our sample stations located throughout the water system. The results are submitted monthly to the State Water Resources Control Board, Division of Drinking Water. All water systems are required to comply with both the State Total Coliform Rule and the Federal Revised Total Coliform Rule. The new federal 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 new 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.



Safe Drinking Water Hotline and Website

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 U.S. EPA's Safe Drinking Water Hotline at 1-800-426-4791 or visiting their website at EPA.gov/SafeWater.

Recommended Water Softener Settings

Groundwater: 20-30 grains/gallon
Surface Water: 20-25 grains/gallon
Desal Water: 3-4 grains/gallon
1 grain/gallon = 17.1 milligrams per liter

Desal water distribution map:
SantaBarbaraCA.gov/Desal

Radon

Radon is a radioactive gas that you cannot see, taste, or smell that is found throughout the United States. It occurs naturally in certain rock formations. As a result, radon can be found in Santa Barbara's groundwater. Groundwater is a small part (<10%) of the City's total water supply. Radon has not been detected in the City's surface water. Radon can enter homes through cracks or holes in foundations and floors. Radon can also get indoors when released from tap water. Test your home if you are concerned about radon. Testing is inexpensive and easy. For additional information, call the State radon program at 1-800-745-7236, the EPA Safe Drinking Water Hotline at 1-800-426-4791, or the National Safety Council Radon Hotline at 1-800-SOS-RADON.

Recycled Water Quality

Recycled water is used at over 50 sites for irrigation at parks, schools, and golf courses. Recycled water is also used at some sites for toilet flushing, dust control, and sidewalk cleaning. The recycled water distribution system uses completely separate pipelines from the City's drinking water system and is denoted by purple pipes, purple color-coded irrigation systems, and signs. Recycled water quality is monitored by the City and updated online at SantaBarbaraCA.gov/RecycledWater.

Lake Cachuma is the City's primary surface water supply, and a source for surrounding communities.

CITY DRINKING WATER QUALITY REPORT

THIS ANNUAL REPORT SHOWS DATA COLLECTED FROM CALENDAR YEAR 2022

PRIMARY STANDARDS

Regulated Contaminants with Primary MCLs or MRDLs

Microbiological Contaminants	MCL	PHG	# of Positive Samples	Highest % of Positives	Major Sources in Drinking Water
Total Coliform Bacteria	5% of monthly samples test positive	MCLG, 0	1	0.90%	Naturally present in the environment
E. coli	0	MCLG, 0	0	0.00%	Human and animal fecal waste
Turbidity (NTU)	TT = 1 NTU	NA	Highest Single Measurement 0.05	Samples ≤0.3 NTU 100%	Natural river sediment/soil runoff
	TT = 95% of samples ≤0.3 NTU				

Lead/Copper Rule			90th % Value	# of Sites Sampled	# of Sites Exceeding AL	
Copper (mg/L)	AL, 1.3	0.3	0.53	31	1	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (µg/L)	AL, 15	0.2	2.6	31	0	

Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors	MCL	PHG	System Wide Average	System Wide Range	
Total Trihalomethanes (µg/L)	LRAA, 80	NA	Highest LRAA, 49	0.4 - 59	Byproduct of drinking water disinfection
Haloacetic Acids (µg/L)	LRAA, 60	NA	Highest LRAA, 22	ND - 21	Byproduct of drinking water disinfection
Disinfectant - Chlorine as Cl_2 (mg/L)	MRDL, 4.0	MRDLG, 4.0	0.73	ND - 2.2	Drinking water disinfectant added for treatment
Bromochloroacetic Acid (µg/L)	NA	NA	2.9	ND - 5.4	Byproduct of drinking water disinfection
Bromodichloromethane (µg/L)	NA	NA	11	ND - 18	Byproduct of drinking water disinfection
Bromoform (µg/L)	NA	NA	3.1	0.30 - 6.7	Byproduct of drinking water disinfection
Chloroform (µg/L)	NA	NA	12	ND - 27	Byproduct of drinking water disinfection
Dibromoacetic acid (µg/L)	NA	NA	2.2	ND - 4.0	Byproduct of drinking water disinfection
Dibromochloromethane (µg/L)	NA	NA	9.5	ND - 17	Byproduct of drinking water disinfection
Dichloroacetic acid (µg/L)	NA	NA	4.5	ND - 9.3	Byproduct of drinking water disinfection
Monochloroacetic acid (µg/L)	NA	NA	1.3	ND - 3.4	Byproduct of drinking water disinfection
Trichloroacetic acid (µg/L)	NA	NA	2.2	ND - 3.9	Byproduct of drinking water disinfection

	MCL	PHG	Surface Water Average	Surface Water Range	Groundwater Average	Groundwater Range	Desalinated Water Average	Desalinated Water Range	
Bromochloroacetic Acid (µg/L)	NA	NA	0.75	ND - 1.0	NA	NA	NA	NA	Byproduct of drinking water disinfection
Bromodichloromethane (µg/L)	NA	NA	1.2	NA	ND	NA	ND	NA	Byproduct of drinking water disinfection
Bromoform (µg/L)	NA	NA	0.93	0.82 - 1.23	ND	NA	ND	NA	Byproduct of drinking water disinfection
Chlorodibromomethane (µg/L)	NA	NA	1.7	NA	NA	NA	ND	NA	Byproduct of drinking water disinfection
Dibromoacetic acid (µg/L)	NA	NA	0.75	ND - 1.0	NA	NA	ND	NA	Byproduct of drinking water disinfection
Dibromochloromethane (µg/L)	NA	NA	1.6	1.4 - 1.9	NA	NA	NA	NA	Byproduct of drinking water disinfection
Dichloroacetic acid (µg/L)	NA	NA	1.0	ND - 1.4	NA	NA	ND	NA	Byproduct of drinking water disinfection
Dichlorobromomethane (µg/L)	NA	NA	0.84	NA	NA	NA	NA	NA	Byproduct of drinking water disinfection
Bromate (µg/L)	10	0.1	5.4	3.3 - 7.4	NA	NA	NA	NA	Byproduct of drinking water disinfection
Control of DBP Precursors - TOC (mg/L)	TT	NA	2.7	2.10 - 3.18	NA	NA	0.23	0.12 - 1.3	Various natural and manmade sources. Total Organic Carbon (TOC) has no health effects.
Radioactive Contaminants									
Uranium (pCi/L)	20	0.43	0.76	NA	2.9	0.74 - 5.0	ND	NA	Erosion of natural deposits
Gross Alpha Particle Activity (pCi/L)	15	NA	NA	NA	ND	NA	1.8	ND - 3.2	Erosion of natural deposits
Inorganic Contaminants									
Aluminum (mg/L)	1	0.6	0.056	ND - 0.18	ND	NA	ND	NA	Erosion of natural deposits
Fluoride (mg/L)	2.0	1	0.46	0.39 - 0.51	0.27	0.27 - 0.27	ND	NA	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Total Nitrate + Nitrite as N (mg/L)	10	10	0.86	0.10 - 0.24	2.9	1.3 - 4.4	ND	NA	Erosion of natural deposits; runoff from fertilizer use
Nitrate as NO3 (mg/L)	45	2	3.8	0.44 - 10.5	12.7	5.76 - 19.6	ND	NA	Erosion of natural deposits; runoff from fertilizer use
Nitrate as N (mg/L)	10	10	0.86	0.10 - 0.24	2.9	1.3 - 4.4	ND	NA	Erosion of natural deposits; runoff from fertilizer use

CITY DRINKING WATER QUALITY REPORT

THIS ANNUAL REPORT SHOWS DATA COLLECTED FROM CALENDAR YEAR 2022

SECONDARY STANDARDS

Regulated Contaminants with Secondary MCLs

Aesthetic Standards Established by the State of California, Department of Public Health. No adverse health effects from exceedance of standards.

	MCL	PHG	Surface Water Average	Surface Water Range	Groundwater Average	Groundwater Range	Desalinated Water Average	Desalinated Water Range	Major Sources in Drinking Water
Iron (µg/L)	300	NA	ND	NA	53	ND - 110	ND	NA	Leaching from natural deposits
Manganese (µg/L)	50	NA	ND	NA	ND	NA	ND	NA	Leaching from natural deposits
Color, Apparent (units)	15	NA	3	ND - 5	8	ND - 20	0.2	ND - 4	Naturally occurring organic materials
Threshold Odor Number at 60 °C (units)	3	NA	3	1 - 4	1	ND - 1	NA	NA	Naturally occurring organic materials
Turbidity, Laboratory (NTU)	5	NA	0.16	0.10 - 0.25	.24	0.10 - 0.55	0.11	0.05 - 1.07	Soil runoff
Total Dissolved Solids (mg/L)	1000	NA	640	542 - 736	646	NA	270	230 - 310	Runoff / leaching from natural deposits
Specific Conductance (µmhos/cm)	1600	NA	952	883 - 1016	1360	820 - 2040	530	460 - 620	Substances that form ions when in water; seawater influence
Chloride (mg/L)	500	NA	33	30 - 36	313	NA	136	55 - 170	Runoff / leaching from natural deposits; seawater influence
Sulfate (mg/L)	500	NA	280	240 - 310	136	NA	4.3	NA	Runoff / leaching from natural deposits

CONTAMINANTS WITH NO MCLs

i.e., Unregulated Contaminants

Boron (mg/L)	NL,1	NA	0.38	0.37 - 0.39	0.14	ND - 0.19	0.74	0.54 - 0.86	The babies of some pregnant women who drink water containing boron in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

Additional Constituents

pH (units)	NA	NA	7.70	7.53 - 7.84	6.86	6.71 - 6.95	8.73	8.20 - 8.90
Total Hardness as $CaCO_3$ (mg/L)	NA	NA	386	340 - 428	420	320 - 510	55	NA
Total Alkalinity as $CaCO_3$ (mg/L)	NA	NA	185	170 - 209	210	NA	46	37 - 120
Calcium (mg/L)	NA	NA	87	77 - 96	110	84 - 140	18	15 - 25
Magnesium (mg/L)	NA	NA	45	37 - 50	26	NA	2.4	NA
Sodium (mg/L)	NA	NA	60	54 - 65	77	52 - 140	77	68 - 90
Potassium (mg/L)	NA	NA	4.5	3.8 - 5.0	1.4	1.1 - 1.7	500	NA
Uranium (µg/L)	NA	NA	1.1	NA	4.2	1.1 - 7.4	ND	NA

City laboratory staff conduct more than 45,000 water quality tests each year to ensure safe drinking water for our community.

Note: Listed in the tables are substances detected in the City's drinking water. Not listed are more than **100** regulated and unregulated substances that were below the laboratory detection level.

The state allows us to monitor for some contaminants less than once per year because the concentrations of the these contaminants do not change frequently. Some of our data, though representative, are more than one year old. Most of the data presented in the table above are from 2022, except for the following: Potassium for desalinated water is from 2021. Boron for surface water is from 2016 and 2017. Lead & Copper Rule results are from 2020. The following data for groundwater is from 2022: chloride, iron, manganese, magnesium, nitrate, nitrite, sulfate, total dissolved solids, and turbidity. The remaining ground water data is from 2018 - 2021.

UNREGULATED CONTAMINANTS MONITORING (UCMR4)

Haloacetic Acids	MCL	PHG	System Wide Average	System Wide Range
Bromochloroacetic Acid (µg/L)	NA	NA	3.9	ND - 8.2
Bromodichloroacetic Acid (µg/L)	NA	NA	3.5	ND - 5.8
Chlorodibromoacetic Acid (µg/L)	NA	NA	2.2	ND - 3.3
Dibromoacetic Acid (µg/L)	NA	NA	2.3	ND - 4.2
Dichloroacetic Acid (µg/L)	NA	NA	6.0	ND - 16
Tribromoacetic Acid (µg/L)	NA	NA	2.3	ND - 4.9
Trichloroacetic Acid (µg/L)	NA	NA	4.2	ND - 12
HAA5	NA	NA	13	ND - 32
HAA6Br	NA	NA	14	ND - 24
HAA9	NA	NA	24	ND - 51
Additional Contaminants				
Bromide (µg/L)	NA	NA	24000	51 - 73000
Germanium (µg/L)	NA	NA	0.42	ND - 0.95
Manganese (µg/L)	NA	NA	0.81	ND - 4.1
Total Organic Carbon (mg/L)	NA	NA	3.5	1.2 - 5.4

About the Unregulated Contaminant Monitoring Rule 4

Unregulated contaminant monitoring helps USEPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

UCMR4: As required by the EPA, the City's UCMR4 data will reflect all detected contaminants from March 2018 through November 2020.

Definitions

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.

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.

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 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.

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.

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

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

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

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

Notification Level (NL)
Notification levels are health-based levels established by CDPH for chemicals in drinking water that lack MCLs.

Legend

mg/L:	milligrams per liter (parts per million)
µg/L:	micrograms per liter (parts per billion)
µmhos/cm:	micromhos per centimeter
pCi/L:	picoCuries per liter (a measure of radioactivity)
ND:	Not Detected at testing limit
NA:	Not Applicable
NTU:	Nephelometric Turbidity Units
DBP:	Disinfection Byproducts
TOC:	Total Organic Carbon
LRAA:	Locational Running Annual Average
ng/L:	nanograms per liter (parts per trillion)