

# City of Santa Barbara

## Annual Water Quality Report



June 2019

### The Importance of Planning & Diversifying Our Water Supply

Above-average rainfall this year brought welcome relief from the extended drought conditions the City has been experiencing. In April 2019, City Council rescinded the Stage Three Drought Emergency and adopted a Stage One Water Supply Condition, encouraging voluntary conservation measures. The City extends a sincere thank-you to the community for making conservation a way of life, which has been crucial during the drought and will continue to be important going forward. While climate conditions have recently improved, our water supplies will take some time to fully recover from the driest seven consecutive years on record.

The City manages its water supplies according to its Long Term Water Supply Plan (LTWSP), which is a policy document that plans for extended drought periods. The planning policies established in the LTWSP successfully guided the City's management of our water supplies to ensure our

community's water needs were met during this unprecedented drought.

Through the years, the City has invested in a diverse water supply portfolio, which includes surface water from Lake Cachuma and Gibraltar Reservoir, State Water, groundwater, recycled water, and desalinated water. While all sources play an important role, one key source during the drought was the Desalination Plant, which was reactivated in summer 2017 and produces 3 million gallons of drinking water per day, which is about 30 percent of the City's demand. The plant serves a critical role in providing a high-quality, local, drought-proof water supply, and it uses state-of-the-art technology and design practices to minimize energy demands and environmental impacts.

We know that Santa Barbara will face future droughts. As we plan for the future, the City remains committed to delivering safe and reliable drinking water to our customers. For more information about your water, visit [SantaBarbaraCA.gov/Water](http://SantaBarbaraCA.gov/Water). If you have questions about your water quality, please speak to our Water Laboratory staff at 805-568-1008.

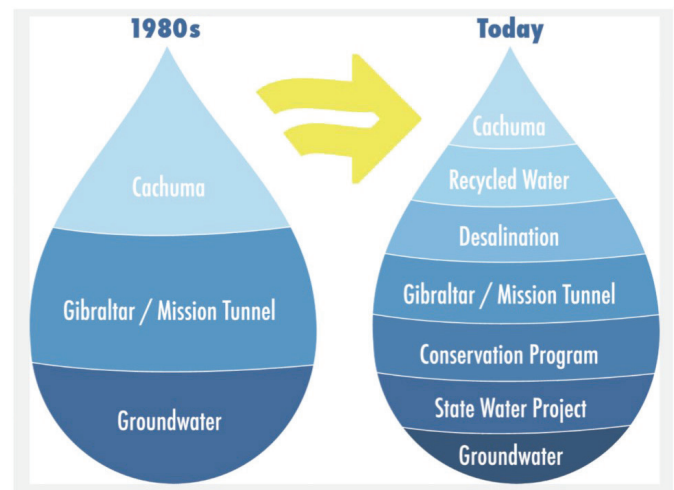


Photo: Santa Barbara County Public Works

After a historic seven-year drought, significant winter rainfall has enabled the City to rescind the Drought Emergency declaration. Lake Cachuma is at approximately 80% of capacity.





## 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.

*In 2018, 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 well site.*

## 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](http://EPA.gov/SafeWater).

### Special Info 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 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 at 1-800-426-4791.*

### Recommended Water Softener Settings

**Groundwater: 18-30 grains/gallon**  
**Surface Water: 19-28 grains/gallon**  
**Desal Water: 3-4 grains/gallon**  
(1 grain/gallon = 17.1 milligrams per liter)

**Desal water distribution map:**  
[SantaBarbaraCA.gov/Desal](http://SantaBarbaraCA.gov/Desal)





The Santa Ynez River is one of the largest rivers on the Central Coast of California and has three reservoirs.

The City's highest nitrate level in 2018 was 7.1 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.

## 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. Nonetheless, 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 are absent at levels exceeding state and federal standards. For more information, call 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 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 lead and copper samples are at low levels. However, if your water has been sitting in your pipes for a number of days, you can minimize lead exposure before using the water for drinking or cooking by flushing your tap for 30 seconds. 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](http://EPA.gov/SafeWater/Lead).

### Lead Sampling in CA Schools

As required by the State Water Resources Control Board, lead sampling in K-12 schools must be completed by July 1, 2019. Private schools may request free sampling of lead until November 1, 2019.

To ensure the delivery of quality drinking water that is free of harmful bacteria, water quality tests are performed weekly at our 42 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 microbes (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.

UNREGULATED CONTAMINANTS MONITORING (UCMR3)				
List 1 Contaminants	MCL	PHG	System Wide Average	System Wide Range
Chromium, Total (µg/L)	NA	NA	0.54	ND - 1.7
Molybdenum (µg/L)	NA	NA	6.3	ND - 11
Strontium (µg/L)	NA	NA	1045	670 - 1900
Vanadium (µg/L)	NA	NA	1.7	ND - 4.0
Chromium 6 (Hexavalent Chromium) (µg/L)	NA	NA	0.49	ND - 1.8
Chlorate (µg/L)	NA	NA	253	72.0 - 410
1,4-Dioxane (µg/L)	NA	NA	0.024	ND - 0.11
1,1-Dichloroethane (ng/L)	NA	NA	31	ND - 130
Chloromethane (ng/L)	NA	NA	31	ND - 250

UNREGULATED CONTAMINANTS MONITORING (UCMR4)				
Haloacetic Acids	MCL	PHG	System Wide Average	System Wide Range
Bromochloroacetic Acid (ug/L)	NA	NA	4.0	ND - 7.3
Bromodichloroacetic Acid (ug/L)	NA	NA	3.7	ND - 5.8
Chlorodibromoacetic Acid (ug/L)	NA	NA	2.4	ND - 3.3
Dibromoacetic Acid (ug/L)	NA	NA	2.6	ND - 4.2
Dichloroacetic Acid (ug/L)	NA	NA	5.5	ND - 14
Tribromoacetic Acid (ug/L)	NA	NA	2.4	ND - 4.9
Trichloroacetic Acid (ug/L)	NA	NA	4.2	ND - 12
HAA5	NA	NA	12	ND - 26
HAA6Br	NA	NA	15	ND - 22
HAA9	NA	NA	24	ND - 44
Additional Contaminants				
Bromide (ug/L)	NA	NA	93	86 - 100
Germanium (ug/L)	NA	NA	0.47	ND - 0.64
Manganese (ug/L)	50	NA	0.53	ND - 1.2
Total Organic Carbon (mg/L)	NA	NA	5.4	5.4 - 5.4

#### About the Unregulated Contaminant Monitoring Rule 3 & Rule 4

The UCMR3 requires public water systems like the City of Santa Barbara to monitor for 28 chemical contaminants for at least a 12-month period between January 2013 and December 2015, and the State Board recommends systems report the data for 5 years. The UCMR4 requires public water systems to monitor for 30 chemical contaminants from January 2018 through December 2020. Types of monitoring conducted:

- Assessment Monitoring uses common analytical method technologies used by drinking water laboratories. For UCMR3, the City monitored for 21 contaminants using this method. For UCMR4, the City will monitor for all 30 contaminants using this method.
- Screening Survey Monitoring uses specialized analytical method technologies not as commonly used by drinking water laboratories. For UCMR3, the City was required to monitor for 7 contaminants using this method.

#### Why was the UCMR Program developed?

The UCMR Program was developed in coordination with the Contaminant Candidate List (CCL). The CCL is a list of contaminants that are not regulated by the National Primary Drinking Water Regulations (NPDWR), are known or anticipated to occur at public water systems, and may warrant regulation under the SDWA. Data collected through the UCMR are stored in the National Contaminant Occurrence Database (NCOD) to support analysis and review of contaminant occurrence, to guide the CCL selection process, and to help determine whether to regulate a contaminant in the interest of protecting public health.

#### How were the contaminants for the UCMR3 & UCMR4 selected?

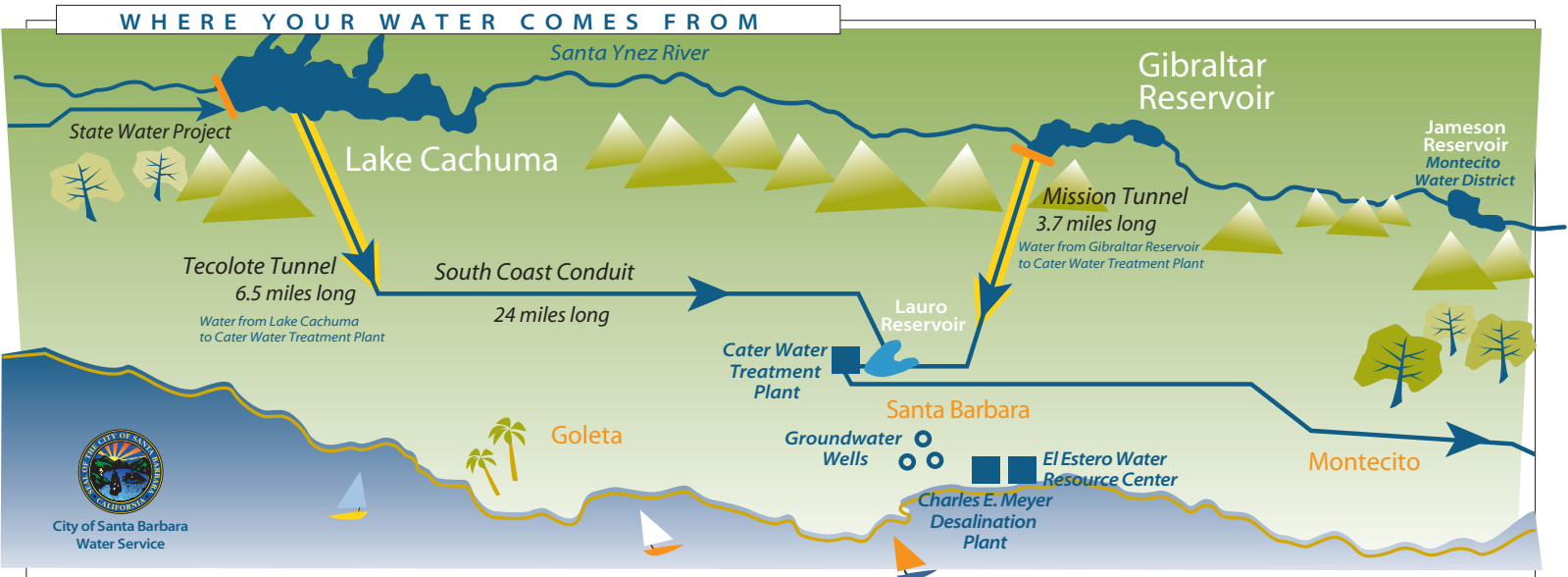
The EPA reviewed contaminants that had been targeted through existing prioritization processes, including previous UCMR contaminants and the CCL. Additional contaminants were identified based on current research on occurrence and health-effect risk factors. Pesticides that were not registered for use in the United States, contaminants that did not have an analytical reference standard, and contaminants whose analytical methods were not ready for use were removed from the list. The EPA further prioritized the remaining contaminants based on workgroup and stakeholder input, cost-effectiveness of analytical methods, and implementation factors, and further evaluated health-effects, occurrence, and persistence data by using evaluations from the Office of Science and Technology in the EPA Office of Water. These procedures for evaluating health effects support the ranking of contaminants for future CCLs.

The UCMR benefits the environment and public health by providing the EPA and other interested parties with scientifically valid data about the presence of these contaminants in drinking water. This allows the EPA and public water systems to assess whether the population is being exposed and to quantify the level of exposure. This data is one of several primary sources of occurrence and exposure information used by the EPA to develop regulatory decisions for emerging contaminants. For more information, visit the EPA website at: [EPA.gov/DWUCMR](http://EPA.gov/DWUCMR).

## 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 your 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.

Compliance with drinking water regulations requires continuous monitoring of filters for turbidity levels during the treatment process. On August 9, 2018, for a 24-hour period, the turbidity meter for one filter was not returned to service after maintenance, which is a violation of the regulations. As our customer, you have a right to know of this monitoring violation. During this period, the turbidity levels for the combination of all operating filters were continuously monitored and met water quality standards.





# 2018 City Drinking Water Quality Report

## 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)

## PRIMARY STANDARDS

Regulated Contaminants with Primary MCLs or MRDLs								
Microbiological Contaminants		MCL	PHG	Highest % of Positives				Major Sources in Drinking Water
Total Coliform Bacteria		5% of monthly samples test positive	MCLG, 0	0.00%				Naturally present in the environment
Turbidity (NTU)		TT = 1 NTU TT = 95% of samples ≤0.3 NTU	NA	Highest Single Measurement 0.10		Samples ≤0.3 NTU 100%		Natural river sediment/soil runoff
Lead/Copper Rule				90th % Value	# of Sites Sampled	# of Sites Exceeding AL	# of Schools Requesting Lead	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives
Copper (mg/L)		AL, 1.3	0.3	0.19	21	0	—	
Lead (µg/L)		AL, 15	0.2	2.5	21	0	1	
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors				System Wide Average		System Wide Range		Byproduct of drinking water disinfection Byproduct of drinking water disinfection Drinking water disinfectant added for treatment
Total Trihalomethanes (µg/L)		LRAA, 80	NA	Highest LRAA, 53		0.56 - 62		
Haloacetic Acids (µg/L)		LRAA, 60	NA	Highest LRAA, 24		ND - 26		
Disinfectant - Chlorine as Cl <sub>2</sub> (mg/L)		MRDL, 4.0	MRDLG, 4.0	0.69		ND - 1.72		Byproduct of drinking water disinfection Organic Carbon (TOC) has no health effects. However, it provides a medium for the formation of disinfection byproducts
Bromate (µg/L)		MCL 10	PHG 0.1	Surface Water Average 4.5	Surface Water Range 3.2 - 5.7	Groundwater Average NA	Groundwater Range NA	
Control of DBP Precursors - TOC (mg/L)		TT	NA	2.72	ND - 3.21	NA	NA	
Radioactive Contaminants								Erosion of natural deposits Erosion of natural deposits
Gross Alpha Particle Activity (pCi/L)		15	MCLG, 0	ND	NA	ND	NA	
Uranium (pCi/L)		20	0.43	0.66	ND - 0.83	ND	NA	
Inorganic Contaminants								Erosion of natural deposits Erosion of natural deposits; discharge from fertilizer & aluminum factories Erosion of natural deposits; runoff from fertilizer use
Aluminum (mg/L)		1	0.6	0.03	ND - 0.06	ND	NA	
Fluoride (mg/L)		2.0	1	0.33	ND - 0.45	0.28	0.27 - 0.30	
Nitrate as N (mg/L)		10	10	ND	NA	2.5	ND - 7.1	

## SECONDARY STANDARDS

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

Regulated Contaminants with Secondary MCLs							
	MCL	PHG	Surface Water Average	Surface Water Range	Groundwater Average	Groundwater Range	
Iron (µg/L)	300	NA	14	ND - 21	81	22 - 140	Leaching from natural deposits
Threshold Odor Number at 60 °C (units)	3	NA	3	2 - 3	1	ND - 2	Naturally occurring organic materials
Turbidity, Laboratory (NTU)	5	NA	0.09	0.05 - 0.16	0.38	0.35 - 0.60	Soil runoff
Total Dissolved Solids (mg/L)	1000	NA	595	270 - 804	630	520 - 810	Runoff / leaching from natural deposits
Specific Conductance (µmhos/cm)	1600	NA	867	550 - 1050	930	770 - 1200	Substances that form ions when in water; seawater influence
Chloride (mg/L)	500	NA	60	33 - 140	100	34 - 230	Runoff / leaching from natural deposits; seawater influence
Sulfate (mg/L)	500	NA	210	2.3 - 335	150	110 - 250	Runoff / leaching from natural deposits

## CONTAMINANTS WITH NO MCLs

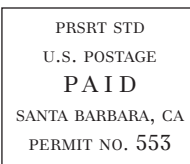
*i.e., Unregulated Contaminants*

Boron (mg/L)	NL, 1	NA	0.85	NA	0.085	NA	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. Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Hexavalent chromium, Cr VI (µg/L)	NA	NA	0.022	NA	0.08	ND - 0.16	
<i>Additional Constituents</i>							<b>Note:</b> Listed in the tables are substances detected in the City's drinking water. Not listed are more than <b>100</b> 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 these contaminants do not change frequently. Some of our data, though representative, are more than one year old. All data presented in the table above are from 2018, except for the following: Uranium as a radioactive contaminant for groundwater is from 2014 and 2015. Uranium as a non-radioactive contaminant for groundwater is from 2014 and 2015. Boron for groundwater is from 2015. Radon 222 for both surface water and groundwater are from 2012. Gross Alpha Particle Activity for surface water is from 2014.
pH (units)	NA	NA	7.76	7.50 - 9.03	NA	NA	
Total Hardness as CaCO <sub>3</sub> (mg/L)	NA	NA	330	58 - 476	380	310 - 510	
Total Alkalinity as CaCO <sub>3</sub> (mg/L)	NA	NA	170	51 - 205	200	190 - 210	
Calcium (mg/L)	NA	NA	79	21 - 106	100	82 - 140	
Magnesium (mg/L)	NA	NA	30	1.4 - 45	30	25 - 38	
Sodium (mg/L)	NA	NA	60	51 - 80	52	42 - 57	
Potassium (mg/L)	NA	NA	4.4	3.8 - 5.1	1.4	1.1 - 1.7	
Radon 222 (pCi/L)	NA	NA	ND	NA	630	460 - 930	
Uranium (µg/L)	NA	NA	3.2	NA	ND	NA	





City of Santa Barbara  
Public Works Department  
Post Office Box 1990  
Santa Barbara, CA 93102-1990



ECRWSS  
Postal Customer

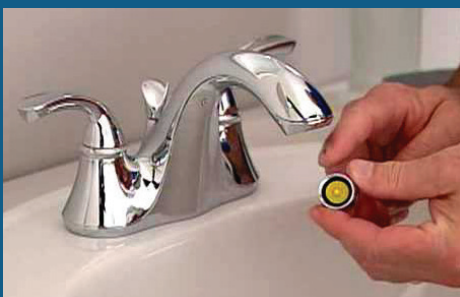
## Get the latest on Santa Barbara's drinking water.

The City distributes this Annual Water Quality Report, a summary of last year's water quality information, to customers as required by state and federal regulation.



## Let's Save Together!

- Receive a free Water Checkup appointment for your home or business.
- Adjust your sprinkler schedule based on the weather. Use the Watering Calculator & Watering % Adjust at our website.
- Landscape rebate available for water-wise plants, irrigation equipment, graywater systems, mulch and more. Pre-inspection is required before work is done.
- Check for and repair leaks inside and out.



For more information, visit [SantaBarbaraCA.gov/WaterWise](http://SantaBarbaraCA.gov/WaterWise) or call 805-564-5460.

## En Español

Este informe contiene información muy importante sobre su agua potable. Si usted tiene preguntas acerca del agua de la ciudad, por favor llame a Jessica Ramirez-Duran a la oficina de Recursos del Agua, al teléfono 805-564-5413.

## For More Information

For questions on water quality, call the Water Resources Laboratory at 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 a.m. on the third Thursday of each month. Water Commission meetings are open to the public and are held in the David Gebhard Public Meeting Room at 630 Garden Street. For more information on the Water Commission, visit [SantaBarbaraCA.gov/WC](http://SantaBarbaraCA.gov/WC).



[SantaBarbaraCA.gov/Water](http://SantaBarbaraCA.gov/Water)



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