City of Santa Barbara
Annual Water Quality Report

June 2017

Reactivation of Santa Barbara's Desal Plant

The City's Charles E. Meyer Desalination Plant (Desal Plant) has been reactivated. The Desal Plant is capable of producing nearly three million gallons of water per day, or 3,125 acre-feet per year, which is about 30 percent of the City's water demand. The Desal Plant is an important water supply for the City. However, continued extraordinary water conservation from the community will remain critical to meeting water demands during the drought. As long as our community continues to meet the 30 percent conservation target, we have sufficient water supplies for the next three years.

The desal water meets or exceeds all state and federal drinking water regulations and the desal treatment process includes conditioning the water to make it compatible with the City's water system. The City will be performing additional lead and copper monitoring and corrosion testing in the distribution system to ensure the desal water has no negative impacts to the City's water pipes and supporting infrastructure.

Desal water is softer water, meaning it contains lower levels of naturally occurring calcium and magnesium. This softer water could reduce or eliminate the use of water softeners for some customers. Contact your water conditioning company to adjust your water softener to your liking.

Once the Desal Plant is operating, some customers may experience seasonal changes in their water quality, when the blending of desal water, groundwater and surface water supplies fluctuates. A map depicting the approximate region and average percentages of desal water distribution is available on the City's website.

The City is committed to delivering safe and reliable drinking water to meet our customers' water demands now and into the future. Reactivating the Desal Plant will help the City meet this commitment. For more information, visit our website at **SantaBarbaraCA.gov/Desal** or call the Water Resources Division at **(805) 564-5387**.

Photo: Mimiaga Engineering Group

The Desal Plant has the capacity to treat three million gallons of water a day.

Drinking Water Treatment Regulations

Most of the City's drinking water comes from Lake Cachuma and Gibraltar Reservoir. A portion of the City's water also comes from groundwater 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 source 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 2016, the City of Santa Barbara's water met all EPA and state drinking water health standards. Before distribution, all of the drinking water from our surface water sources is treated at the Cater Water Treatment Plant and the groundwater is treated at the Ortega Groundwater Treatment Plant or at the well-site.

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 from infections. These people should seek advice about drinking water from their health care providers. USEPA/ 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 1-800-426-4791.

Safe Drinking Water Hotline and Web Site

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 *USEPA's Safe Drinking Water Hotline* at 1-800-426-4791 or visiting their website at www.epa.gov/safewater/.

The Santa Ynez River is one of the largest rivers on the Central Coast of California.

The City's highest nitrate level in 2016 was 30.01 mg/L. Nitrate in drinking water at levels above 45 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 45 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

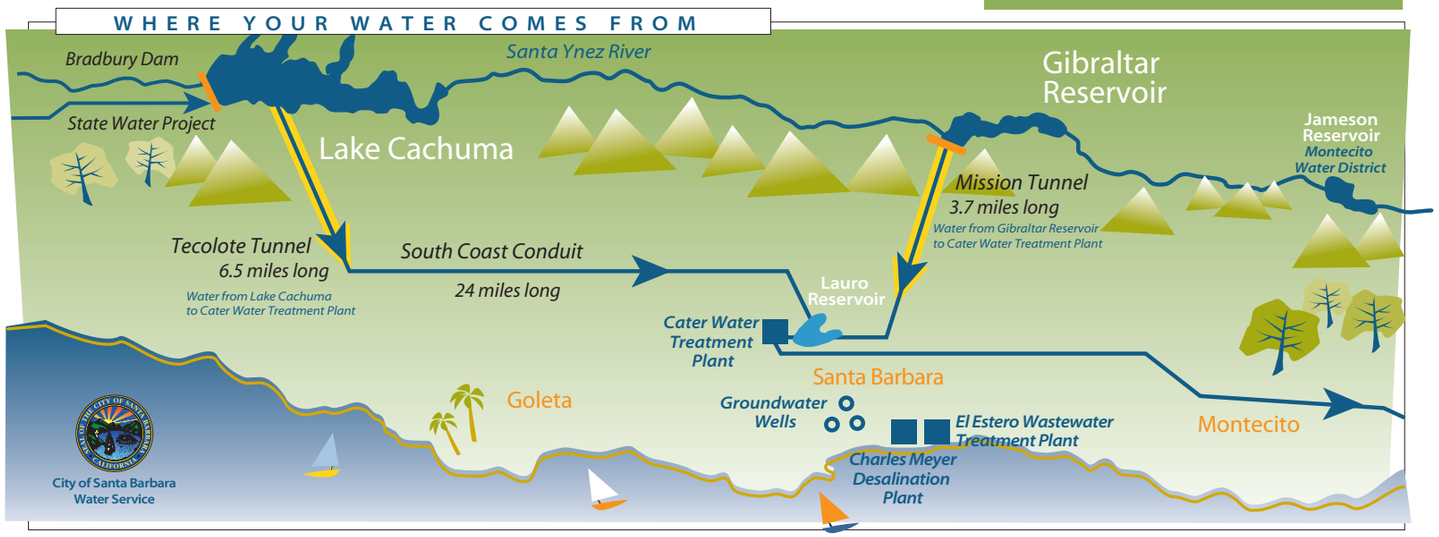
The City has evaluated the vulnerability of our water supplies to contamination. Gibraltar Reservoir's remote location and the restriction of access to the reservoir limit opportunities for contamination. Water contact activities at Lake Cachuma are limited. City groundwater supplies are generally located deep beneath the surface. Nonetheless, there is the potential for contaminants from surface sources such as gasoline stations and dry cleaners to reach City water supplies. All water sources are carefully monitored to ensure that pollutants are not present at levels exceeding state and federal standards. For more information, call 805-568-1008.

To ensure the delivery of quality drinking water that is free of harmful bacteria, water quality tests are performed weekly at our 36 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.

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 http://www.epa.gov/safewater/lead.

WHERE YOUR WATER COMES FROM



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 Chrmoium) (µg/L)	NA	NA	0.49	ND - 1.8
Chlorate (µg/L)	NA	NA	253	72 - 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

About the Unregulated Contaminant Monitoring Rule 3

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. Two types of monitoring will be conducted:

- Assessment Monitoring uses common analytical method technologies used by drinking water laboratories. For UCMR3, the City will monitor for 21 contaminants using this method.
- Screening Survey Monitoring uses specialized analytical method technologies not as commonly used by drinking water laboratories. The City is 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 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 more extensive health-effects evaluations by 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.

UCMR3: As required by the EPA, the City's UCMR3 data reflects all detected contaminants from **March 2014 through July 2015.**

For more information, visit the EPA Web site at: ***http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/index.cfm or call 202-564-3750, TTY 711.***

Cryptosporidium: **Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and some elderly people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.**

Your Water Softener Setting

Groundwater: 19-24 grains/gallon Surface Water: 19-21 grains/gallon

Desal Water: 1-2 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 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 1-800-745-7236, the EPA Safe Drinking Water Hotline 1-800-426-4791, or the National Safety Council Radon Hotline, 1-800-SOS-RADON.

2016 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	0.05%				Naturally present in the environment
			Highest Single Measurement		Samples ≤0.3 NTU		
Turbidity (NTU)	TT = 1 NTU TT = 95% of samples ≤0.3 NTU	NA	0.08		100%		Natural river sediment/soil runoff
Lead/Copper Rule			90th % Value	# of Sites Sampled	# of Sites Exceeding Action Level		Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives
Copper (mg/L)	AL, 1.3	0.3	0.47	60	0		
Lead (µg/L)	AL, 15	0.2	2.6	60	0		
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors			System Wide Average		System Wide Range		
Total Trihalomethanes (µg/L)	LRAA, 80	NA	Highest LRAA, 78		3.3 - 100		Byproduct of drinking water disinfection
Haloacetic Acids (µg/L)	LRAA, 60	NA	Highest LRAA, 11		1.5 - 15		Byproduct of drinking water disinfection
Disinfectant - Chlorine as Cl_2 (mg/L)	MRDL, 4.0	MRDLG, 4.0	0.55		ND - 1.82		Drinking water disinfectant added for treatment
	MCL	PHG	Surface Water Average	Surface Water Range	Groundwater Average	Groundwater Range	
Bromate (µg/L)	10	0.1	5.6	4.3 - 8.4	NA	NA	Byproduct of drinking water disinfection
Control of DBP Precursors - TOC (mg/L)	TT	NA	2.79	2.52 - 3.12	NA	NA	Organic Carbon (TOC) has no health effects. However, it provides a medium for the formation of disinfection byproducts
Radioactive Contaminants							
Gross Alpha Particle Activity (pCi/L)	15	MCLG, 0	ND	NA	2.18	ND - 4.8	Erosion of natural deposits
Uranium (pCi/L)	20	0.43	1.0	NA	2.5	ND - 7.7	Erosion of natural deposits
Inorganic Contaminants							
Aluminum (mg/L)	1	0.6	0.01	ND - 0.03	ND	NA	Erosion of natural deposits
Arsenic (µg/L)	10	0.004	6.9	1.0 - 30	0.9	NA - 1.3	Erosion of natural deposits
Hexavalent chromium, Cr VI (µg/L)	10	0.02	ND	NA	0.61	ND - 1.7	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Fluoride (mg/L)	2.0	1	0.45	0.39 - 0.52	0.29	NA	Erosion of natural deposits; discharge from fertilizer & aluminum factories
Nitrate as NO_3 (mg/L)	45	45	0.36	NA - 0.80	8.62	15 - 30.1	Erosion of natural deposits; runoff from fertilizer use

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	
Color (Units)	15	NA	ND	NA	2	ND - 3	Naturally-occurring organic materials
Copper (mg/L)	1.0	NA	0.01	0.004 - 0.02	ND	NA	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Iron (µg/L)	300	NA	ND	NA	154	54 - 632	Leaching from natural deposits
Manganese (µg/L)	50	NA	ND	NA	134	45 - 293	Naturally-occurring organic materials; causes discoloration of water
Threshold Odor Number at 60 °C (units)	3	NA	6	3 - 12	35	2 - 67	Naturally-occurring organic materials
Turbidity, Laboratory (NTU)	5	NA	0.06	0.04 - 0.11	8.0	0.07 - 34	Soil runoff
Total Dissolved Solids (mg/L)	1000	NA	669	630 - 694	735	520 - 1158	Runoff / leaching from natural deposits
Specific Conductance (µmhos/cm)	1600	NA	1010	990 - 1045	1014	783 - 1714	Substances that form ions when in water; seawater influence
Chloride (mg/L)	500	NA	56.5	46.1 - 71.0	104	48 -160	Runoff / leaching from natural deposits; seawater influence
Sulfate (mg/L)	500	NA	238	229 - 246	107	84 -130	Runoff / leaching from natural deposits

CONTAMINANTS WITH NO MCLs

i.e. Unregulated Contaminants

Boron (mg/L)	NL,1	NA	0.39	NA	0.11	0.08 - 0.16
Additional Constituents						
pH (units)	NA	NA	7.77	7.55 - 7.97	7.00	6.43 - 7.26
Total Hardness as $CaCO_3$ (mg/L)	NA	NA	337	328 - 344	370	330 - 410
Total Alkalinity as $CaCO_3$ (mg/L)	NA	NA	179	160 - 193	231	102 - 307
Calcium (mg/L)	NA	NA	72.1	68.0 - 74.5	96.0	89.0 - 110
Magnesium (mg/L)	NA	NA	43	39 - 45	29	26 - 32
Sodium (mg/L)	NA	NA	82	74 - 90	63	45 - 81
Potassium (mg/L)	NA	NA	4.5	4.2 - 4.7	1.8	1.6 - 2.0
Radon 222 (pCi/L)	NA	NA	ND	NA	628	460 - 930
Uranium (µg/L))	NA	NA	1.5	NA	1.7	ND - 5.2
Cryptosporidium (oocysts/L)	TT	NA	ND	NA	NA	NA

Note: Listed in the tables are substances detected in the City's drinking water. Not listed are more than **139** 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. All data presented in the table above are from 2016, except for the following: Radioactive contaminants and Uranium for surface water are from 2014. Radon 222 for surface water is from 2012. Radon 222, hexvalent chromium and Boron for groundwater are from 2012. Uranium for groundwater is from 2014. Lead & Copper are from 2015.

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Get the latest on the drought and 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.

Keep Saving Water, Santa Barbara

- **Receive a free water check-up for your home or business.**
- **Reduce landscape watering as much as possible. Gold is the New Green!**
- **Landscape rebate available for water-wise plants, irrigation equipment, graywater systems, mulch and more. Pre-inspection is required before work is done.**
- **Rebate available for high efficiency washing machines.**

For more information, visit SantaBarbaraCA.gov/WaterWise or call 805-564-5460.

En Español

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. 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 Board of Water Commissioners meets at 9:00 am on the third Thursday of each month. Water Commission meetings are open to the public and are usually held in the David Gebhard Public Meeting Room at 630 Garden Street.

SantaBarbaraCA.gov/WC

Let's Save Together
waterwise
City of Santa Barbara

SantaBarbaraCA.gov/Water

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