Santa Barbara Water
June 2016
City of Santa Barbara Annual Water Quality Report

Desalination Plant Reactivation Update

The reactivation of the City's Charles E. Meyer Desalination Plant is well underway and will begin providing Santa Barbara with potable water by October 2016. Most of the underground pipelines are in place, concrete slabs and walls are being poured, and the site is being prepared for the water treatment equipment, which will arrive this summer.

The Desalination Plant was originally constructed in response to the 1986-1992 drought and was taken out of service when the drought ended in 1992. Since then, the City's Long Term Water Supply Plan has included the Plant as an emergency water supply during times of extended drought.

The Desalination Plant will be designed, built and operated by IDE Americas, Inc. It will use state of the art design and technology to minimize its environmental impacts. Once in service, the Plant will produce enough potable water to meet approximately 30 percent of the City's drought water demand.

Santa Barbara is currently experiencing the driest five years on record. The City is fortunate to have a diverse water supply portfolio. It consists of surface water, groundwater, desalinated water, supplemental water purchases via the State Water Project, and recycled water. We are also relying on our customers to continue their extraordinary conservation efforts to ensure our community continues to have sufficient water supplies. Since the Stage Three Drought Emergency Declaration, Santa Barbara has achieved a 34 percent reduction in water use compared to 2013. We appreciate the community's outstanding response to the drought. For more information, please visit our website at **SantaBarbaraCA.gov/Desal.**

Photo: Ray Ramos

The Desal Plant is currently under construction.

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 2015 the City of Santa Barbara's water met all EPA and State drinking water health standards. All of the drinking water that comes from our surface water sources, Lake Cachuma and Gibraltar Reservoir, is treated at the Cater Water Treatment Plant before being distributed to customers. This newsletter provides a summary of last year's water quality for the City's water customers.

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, 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.

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 California Department of Public Health. Though low levels of bacteria are considered acceptable, the City is happy to report that in 2015, there were no occurrences of harmful bacteria detected in our drinking water.

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. The City's highest nitrate level in 2015 was 30.4 mg/L.

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.**

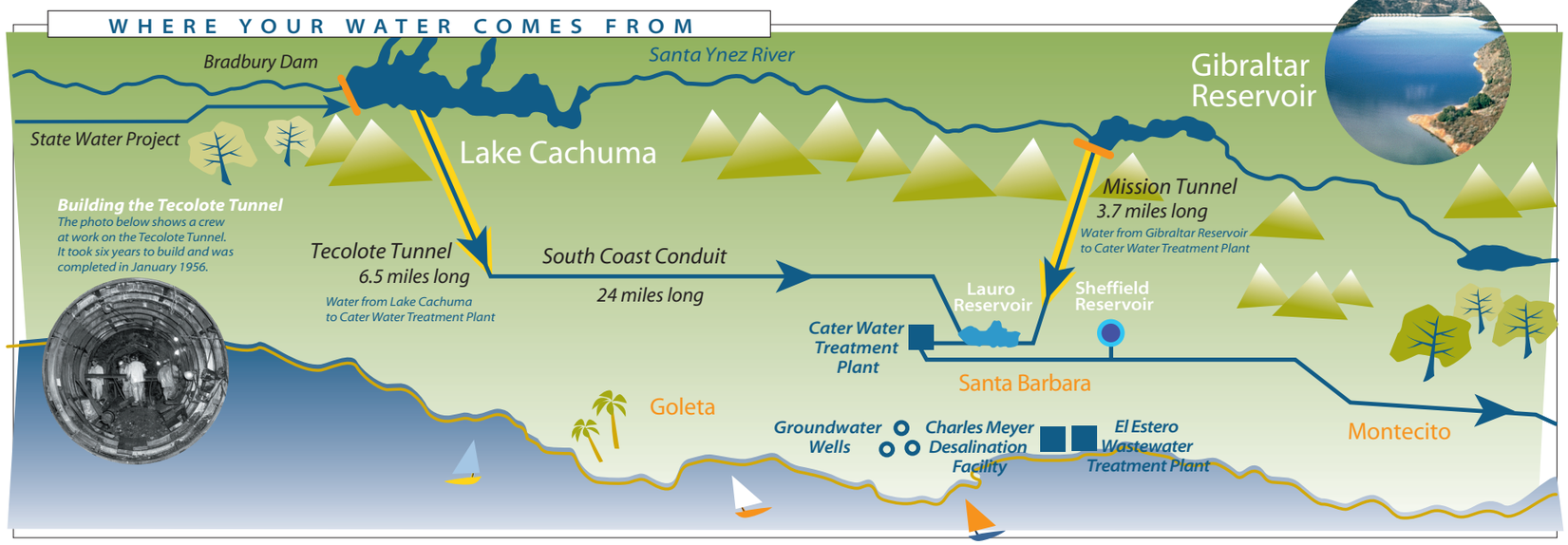
For more information, visit the EPA Web site at: ***http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/index.cfm or call 202-564-3750, TTY 711.***

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 the elderly 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.

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 is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. The City's water lead and copper samples are at low levels. However, if your water has been sitting in the 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



Your Water Softener Setting

The City's water has a hardness range of 18 to 22 grains per gallon for surface water and 19 to 38 grains per gallon for groundwater. One grain per gallon equals 17.1 milligrams per liter.

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 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.

2015 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:	nanogram 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	0.69%				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	0.07		100%		Natural river sediment/soil runoff
Lead/Copper Rule			90th % Value	# of Sites Sampled	# of Sites Exceeding Action Level		
Copper (mg/L)	AL, 1.3	0.3	0.47	60	0		Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives
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, 77		12 - 82		Byproduct of drinking water disinfection
Haloacetic Acids (µg/L)	LRAA, 60	NA	Highest LRAA, 9		2 - 13		Byproduct of drinking water disinfection
Disinfectant - Chlorine as Cl_2 (mg/L)	MRDL, 4.0	MRDLG, 4.0	0.57		ND - 2.5		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	2.5 - 9.5	NA	NA	Byproduct of drinking water disinfection
Control of DBP Precursors - TOC (mg/L)	TT	NA	2.87	2.60 - 3.55	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	ND	NA	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	0.12	0.05 - 0.18	ND	NA	Erosion of natural deposits
Arsenic (µg/L)	10	0.004	3.0	2.2 - 4.2	ND	NA	Erosion of natural deposits
Hexavalent chromium, Cr VI (µg/L)	10	0.02	ND	NA	0.01	ND - 0.08	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	0.37 - 0.51	0.27	NA	Erosion of natural deposits; discharge from fertilizer & aluminum factories
Nitrate as NO_3 (mg/L)	45	45	ND	NA	10.3	4.70 - 30.4	Erosion of natural deposits; runoff from fertilizer use
Volatile Organic Compounds							
Methyl-tert-butyl ether, MTBE (µg/L)	13	13	NA	NA	0.60	ND - 1.6	Leaking underground storage tanks; discharge from petroleum and chemical factories

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	17	12 -22	8	5 - 10	Naturally-occurring organic materials
Copper (mg/L)	1.0	NA	0.06	0.03 - 0.09	ND	NA	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Iron (µg/L)	300	NA	160	110 - 239	215	30 - 530	Leaching from natural deposits
Manganese (µg/L)	50	NA	34	25 - 42	160	45 - 509	Naturally-occurring organic materials; causes discoloration of water
Threshold Odor Number at 60 °C (units)	3	NA	19	3 - 40	1	1 - 2	Naturally-occurring organic materials
Turbidity, Laboratory (NTU)	5	NA	3.73	2.49 - 6.35	2.26	0.04 - 6.10	Soil runoff
Total Dissolved Solids (mg/L)	1000	NA	686	592 - 744	896	698 - 1136	Runoff / leaching from natural deposits
Specific Conductance (µmhos/cm)	1600	NA	947	879 - 986	922	885 - 958	Substances that form ions when in water; seawater influence
Chloride (mg/L)	500	NA	38.6	31.9 - 46.0	40.0	NA	Runoff / leaching from natural deposits; seawater influence
Sulfate (mg/L)	500	NA	259	241 - 290	120	NA	Runoff / leaching from natural deposits

CONTAMINANTS WITH NO MCLs

i.e. Unregulated Contaminants

Boron (mg/L)	NL,1	NA	0.35	NA	0.11	0.08 - 0.16
Additional Constituents						
pH (units)	NA	NA	7.84	7.20 - 8.22	6.89	6.30 - 7.25
Total Hardness as $CaCO_3$ (mg/L)	NA	NA	341	318 - 370	320	NA
Total Alkalinity as $CaCO_3$ (mg/L)	NA	NA	186	176 - 220	213	210- 222
Calcium (mg/L)	NA	NA	70.4	66.1 - 72.2	87	NA
Magnesium (mg/L)	NA	NA	43.5	39.4 - 47.0	25.0	NA
Sodium (mg/L)	NA	NA	69.4	65.0 - 75.0	44.0	NA
Potassium (mg/L)	NA	NA	4.44	4.00 - 4.78	1.40	NA
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	0.1	ND - 0.1	NA	NA

Note: Listed in the table above 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 2015, except for the following: Radioactive contaminants and Uranium for surface water are from 2014. Radon 222 for surface water is from 2012. Boron for surface water is from 2010. Radioactive contaminants, radon 222, hexvalent chromium and Boron for groundwater are from 2012.

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Get the latest on the drought and Santa Barbara's drinking water.

The City distributes this Annual Water Quality Report to customers as required by federal regulations.

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!**
- **Rebates are available on pre-approved water-wise plants, irrigation equipment, graywater systems, mulch and more. Pre-inspection is required.**
- **Check for and repair leaks inside and out.**

Fix Silent Leaks

For more information, go to 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 Dora Sanchez a la oficina de Recursos del Agua, al telefono 805-564-5413.

For More Information

For questions on water quality, call the laboratory analysts 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 8:00 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.

On the web: SantaBarbaraCA.gov/Water

Let's Save Together
waterwise
City of Santa Barbara

Questions on Water
Call 805-564-5460

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