

BAKERSFIELD DISTRICT

2009  
WATER  
QUALITY  
REPORT



## INTRODUCTION

At California Water Service Company (Cal Water), our goal is to supply you with safe, high-quality drinking water, 24 hours per day, seven days per week, 365 days per year. As part of that effort, we are pleased to provide this annual water quality report, which includes information about where your water comes from, what it contains, how it compares to state and federal standards, and how you can help us conserve water. It also explains the steps we take to protect your water supply. **Most importantly, it confirms that your water met or surpassed all primary and secondary water quality standards during this reporting period.**

If you have any questions, suggestions, or concerns, please contact your local Customer Center, either by phone or through the contact link on our web site. Also, please watch for bill inserts, where you will find announcements of any water-related public meetings or workshops, as well as important information about your water. Additional information and time-sensitive announcements about your water can be found at [www.calwater.com](http://www.calwater.com).

## 2009 WATER QUALITY REPORT

*Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.*

## WHERE YOUR WATER COMES FROM

Cal Water has provided high-quality water utility services in the Bakersfield area since 1927. To meet our customers' needs, we use a combination of local groundwater produced by 84 wells (treated where necessary so that it complies with standards) and surface water from the Kern River (treated with highly advanced membrane filtration), as well as water purchased from the Kern County Water Agency.

Cal Water proactively maintains and upgrades its facilities to ensure a reliable, high-quality supply. If you have any questions, please contact Tim Treloar, District Manager, at (661) 837-7200.

## INSIDE WATER QUALITY



Meeting strict water quality regulations is a full-time job for dozens of Cal Water employees. One of those employees is Sophie James, Cal Water's Manager of Laboratory Services.

"I didn't set out to work in water quality," says Sophie. "It just happened. I graduated from college with a Bachelor of Science Degree in chemistry and was hired by an agency that placed temporary employees in scientific positions. My first assignment was with an environmental laboratory that conducted drinking water and wastewater testing for a local municipality. There I began my career in water quality. I've worked at Cal Water for almost four years."

Fourteen years of laboratory experience, undergraduate and graduate degrees in chemistry, and management experience have helped prepare Sophie for this demanding position.

Of course, Sophie doesn't manage water quality on her own. "Our water quality team is made up of 25 employees. This includes our laboratory group, which is, among other things, responsible for providing analytical services to all of our water systems; our project management team, which handles the regulatory aspects of water quality; and our administrative and management teams."

The effort required to meet water quality standards is determined by the water source. Some water sources require less treatment and testing, and some require more. We dedicate whatever resources are necessary to ensure that our customers receive good, clean water. As Sophie says, "We mean it when we say that protecting customer health and safety is our highest priority!"

When she isn't at work focusing on water quality, Sophie most enjoys spending time with her family. She is a mother of two boys and a baby girl.

## DRINKING WATER SOURCE ASSESSMENT AND PROTECTION PROGRAM (DWSAPP)

Cal Water has submitted to the California Department of Public Health a DWSAPP report for each water source that is used in the water system. The DWSAPP report identifies possible sources of contamination to aid in prioritizing cleanup and pollution prevention efforts. All reports are available for viewing or copying at our Customer Center.

The water sources in your system are considered most vulnerable to wastewater, stormwater, wastewater and drinking water treatment plants, water supply wells, surface waters, above- and underground storage tanks, known contaminant plumes, existing and historic gas stations, car washes, automobile body/repair shops, motor pools, parking lots, transportation terminals and corridors, airports, historic waste dumps/landfills, junk yards, dredging, agriculture, farm machine repairs, farm chemical distribution, pesticide/fertilizer/petroleum storage, chemical/petroleum processing, parks, golf courses, utility stations, high-density housing, hotels/motels, construction/demolition sites, large equipment storage yards, dry cleaners, appliance repair, furniture repair/manufacturing, lumber industries, hardware stores, photo processing, electrical/electronic manufacturing, and machine shops.

We encourage customers to join us in our efforts to prevent water pollution and protect our most precious natural resource.

## WHAT ABOUT FLUORIDE?

Fluoride occurs naturally in many water sources, but Cal Water does not add fluoride to your water supply.

California law requires Cal Water to add fluoride as funding from federal grants or other sources becomes available. In the meantime, you might wish to check with your dentist to see if fluoride supplements are recommended for any children in your family. Note that supplements may not be recommended for children who attend a school that has fluoridated water.

More information about fluoridation, oral health, and current issues can be found on the California Department of Public Health web site at [www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx](http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx). For general information on water fluoridation, visit us online at [www.calwater.com](http://www.calwater.com).

## CALIFORNIA WATER SERVICE COMPANY

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## WATER MAIN FLUSHING

Due to drought conditions, Cal Water only conducts flushing when necessary to ensure good water quality or when local fire agencies require fire protection data. By opening certain fire hydrants under controlled conditions, we remove minerals and sediment that build up in water lines over time or enter during water line repairs.

Although it may seem wasteful to the casual observer, flushing is actually an important and necessary water utility activity that is endorsed by the American Water Works Association and conducted in accordance with guidelines set by the California Department of Public Health. Cal Water is also actively researching practical methods of capturing water released during flushing so that it can be put to additional use.

You will continue to receive water if we need to flush in your area, but the pressure might be lowered temporarily. If you notice any discoloration or sediment in your water after we have flushed, please allow water to run from your outside hose bib until it clears.



## LEAD IN WATER

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing.

The water delivered by Cal Water to your meter meets all water quality standards, but your home plumbing can affect water quality. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.



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 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## POTENTIAL SOURCES OF CONTAMINATION

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency (USEPA) Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap and bottled) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

**Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

**Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the California Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people, such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, those 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 from their health care providers about drinking water. USEPA/ Centers for Disease Control and Prevention (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 (800) 426-4791.

## LOVE YOUR YARD; PROTECT YOUR WATER

A significant portion of residential water use — more than half in most cases — occurs outdoors. And, sadly, much of the water used outdoors is lost to evaporation, runoff, and overwatering. This wasted water can affect water quality. Why? Because what goes around, comes around.

When it comes to water, nature is the ultimate recycler. The water from your garden hose may go on to help form a rain cloud or seep into the ground to feed a nearby well. Over the course of time, it may end up back in your garden hose, ready to start the whole process over again.

But when water from your yard runs into storm drains or finds its way into the water table, it can take contaminants with it, such as fertilizers and pesticides. When that happens, Cal Water must spend time, money, and energy to remove those contaminants before the water can be provided to customers.

The California State Water Resources Control Board has a number of recommendations for ways to reduce the impact of these contaminants, including:

- Buy household and garden products that are environmentally safe, and don't buy more than you need.
- Apply all household and garden products sparingly, and carefully follow instructions printed on the package.
- Do not apply lawn or garden products when rain is forecast.
- Take unused pesticides, fertilizers, weed killers, and paints to a recycling station.



Read the instructions carefully before using fertilizers, pesticides, or any other substance in your garden or yard, and consult an expert if you still have questions. You can help prevent runoff and reduce water contaminants by reducing the amount of water you use outdoors.

In addition to carefully and conservatively managing your garden, shortening your sprinkler run times can make a significant difference. You can also be greener by eliminating sprinkler overspray, repairing leaks, and turning off your sprinklers when it rains.

Last, but not least, think about what kind of plants you have. Native and drought-tolerant plants generally use less water and might require less fertilizer and pesticide than plants that are not indigenous to your area.



**PRIMARY DRINKING WATER STANDARDS**

Radiological	Year Tested	Unit	MCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Gross alpha particle activity	2006–2009	pCi/L	15	(0)	No	ND–17	1.4	Erosion of natural deposits
Radium 228	2006–2009	pCi/L	5	0.019 (0)	No	ND–1.9	0.1	Erosion of natural deposits
Uranium	2006–2009	pCi/L	20	0.43	No	ND–13	2.7	Erosion of natural deposits

Inorganic Chemicals	Year Tested	Unit	MCL (SMCL)	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Aluminum	2007–2009	ppm	1 (0.2)	0.6	No	ND–0.3	0.01	Residue from some surface water treatment processes
Arsenic <sup>1</sup>	2007–2009	ppb	10	0.00	No	ND–8	2	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium	2007–2009	ppm	1	2	No	ND–0.2	0.1	Discharges of oil-drilling waste and from metal refineries; erosion of natural deposits
Chromium	2007–2009	ppb	50	(100)	No	ND–10	1.9	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride	2007–2009	ppm	2	1	No	ND–0.3	0.2	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as nitrate) <sup>2</sup>	2009	ppm	45	45	No	ND–38	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium	2007–2009	ppb	50	(50)	No	ND–5	0.3	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)

Organic Chemicals	Year Tested	Unit	MCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Dibromochloropropane (DBCP)	2007–2009	ppt	200	(0)	No	ND–3.7	2	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit
cis-1,2-Dichloroethylene	2007–2009	ppb	6	(70)	No	ND–0.9	0	Discharge from industrial chemical factories; major biodegradation product of TCE and PCE groundwater contamination
1,2-Dichloropropane	2007–2009	ppb	5	0.5	No	ND–0.85	0.01	Discharge from industrial chemical factories; primary component of some fumigants
Tetrachloroethylene (PCE)	2007–2009	ppb	5	0.06	No	ND–4.8	0.3	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
Trichloroethylene (TCE)	2007–2009	ppb	5	0.8	No	ND–3.2	0.4	Discharge from metal-degreasing sites and other factories

Disinfection Byproducts	Year Tested	Unit	MCL (SMCL)	PHG (MCLG)	Exceeded Standard?	Range	Highest Annual Average	Source of Substance
Total haloacetic acids	2009	ppb	60	n/a	No	ND–66	19	Byproduct of drinking water chlorination
Total trihalomethanes	2009	ppb	80	n/a	No	ND–49	25	Byproduct of drinking water chlorination
Chlorate	2009	ppb	NL=800	n/a	No	0.07–0.25	0.01	Byproduct of drinking water chlorination
n-Nitrosodimethylamine	2009	ppt	NL=10	3	No	ND–3	0.02	Byproduct of drinking water chlorination; industrial processes

Disinfectant and DBP Precursor	Year Tested	Unit	MRDL	MRDLG	Exceeded Standard?	Range	Average	Source of Substance
Chlorine	2009	ppm	4	4	No	ND–1.7	0.9	Drinking water disinfectant added for treatment
Total organic carbon <sup>4</sup>	2009	ppm	TT	n/a	No	1.1–2.2	1.5	Various natural and man-made sources

Microbiological	Year Tested	Unit	MCL	(MCLG)	Exceeded Standard?	Highest Monthly	Source of Substance
Total coliform	2009	positive samples	5%	(0)	No	0.61%	Naturally present in the environment
Fecal coliform and E. coli <sup>5</sup>	2009	positive samples		(0)	No	1	Human and animal fecal waste

**OTHER REGULATED SUBSTANCES**

Metals	Year Tested	Unit	AL	PHG	Exceeded Standard?	90th Percentile	Samples > AL	Source of Substance
Copper	2007	ppm	1.3	0.3	No	0.26	0 of 50	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

**SECONDARY DRINKING WATER STANDARDS AND UNREGULATED COMPOUNDS**

Inorganic Chemicals	Year Tested	Unit	SMCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Boron	2007–2009	ppm	NL=1	n/a	No	ND–0.14	0	Erosion of natural deposits
Calcium	2007–2009	ppm	n/a	n/a	No	16–85	35	Erosion of natural deposits
Chloride	2007–2009	ppm	500	n/a	No	8–73	20	Erosion of natural deposits; seawater influence
Color	2007–2009	Units	15	n/a	No	ND–2	1	Naturally occurring organic matter
Foaming agents (MBAS)	2007–2009	ppb	500	n/a	No	ND–120	3	Municipal and industrial waste discharges
Hardness	2007–2009	ppm	n/a	n/a	No	51–250	105	Erosion of natural deposits
Iron <sup>6</sup>	2007–2009	ppb	300	n/a	No	ND–850	17	Leaching from natural deposits; industrial wastes
Magnesium	2007–2009	ppm	n/a	n/a	No	ND–12	5	Erosion of natural deposits
Odor	2007–2009	Units	3	n/a	No	ND–1	0.2	Naturally occurring organic matter
pH	2007–2009	Units	n/a	n/a	No	6.2–9.9	7.9	Inherent characteristic of water
Sodium	2007–2009	ppm	n/a	n/a	No	15–52	25	Erosion of natural deposits; seawater influence
Specific conductance	2007–2009	µS/cm	1600	n/a	No	180–750	339	Erosion of natural deposits; seawater influence
Sulfate	2007–2009	ppm	500	n/a	No	12–120	29	Runoff/leaching from natural deposits; industrial wastes
Total dissolved solids	2007–2009	ppm	1000	n/a	No	90–450	211	Runoff/leaching from natural deposits
Turbidity (groundwater)	2007–2009	NTU	5	n/a	No	ND–3.6	0.2	Soil runoff
Vanadium	2007–2009	ppb	NL=50	n/a	No	ND–15	7	Erosion of natural deposits; manufacturing of alloys and steel
Zinc	2007–2009	ppm	5.0	n/a	No	ND–0.21	0.01	Runoff/leaching from natural deposits; industrial wastes

Organic Chemicals	Year Tested	Unit	SMCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Source of Substance
Dichlorodifluoromethane (Freon 12)	2007–2009	ppb	NL=1000	n/a	n/a	ND–20	0	Refrigerant
1,2,3-Trichloropropane (TCP) <sup>7</sup>	2007–2009	ppt	NL=5	n/a	n/a	ND–260	3	Pesticide that may still be present in soils due to runoff/leaching; various industrial uses

<sup>1</sup>While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The USEPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects, such as skin damage and circulatory problems.

<sup>2</sup>The average nitrate level was 10 ppm, with a maximum level of 38 ppm. We are closely monitoring the nitrate levels. Nitrate in drinking water at levels above 45 ppm 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 ppm 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 seek advice from your health care provider.

<sup>3</sup>For surface water systems, the treatment technique dictates that the turbidity level of the filtered water meets certain criteria in 95% of the measurements taken and shall not exceed 1 NTU at any time. Cal Water's surface water supply is treated through membranes where the treatment technique requires the filtered water be less than or equal to 0.1 NTU in 95% of measurements taken. The Kern County Water Agency's surface water is treated through conventional filtration where the treatment technique requires the filtered water be less than or equal to 0.3 NTU in 95% of measurements taken. Turbidity is a measurement of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

<sup>4</sup>Total Organic Carbon (TOC) has no health effects; however, TOC provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). The treatment technique dictates that a removal ratio of 1 or higher must be achieved. Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects such as liver, kidney, or nervous system problems, and may lead to an increased risk of cancer. Concerns regarding disinfection byproducts are based upon exposure over many years.

<sup>5</sup>One of the 2,119 bacteria samples collected from the distribution system in 2009 was positive for E. coli bacteria; follow up samples did not confirm there was E. coli in the water supplied to our customers. A detailed investigation was performed of the dedicated sample site and bird droppings were observed on a nearby block wall indicated the contamination may have been introduced during sample collection. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems. The MCL is a routine sample and a repeat sample that are both total coliform positive, and at least one is also fecal coliform or E. coli positive.

<sup>6</sup>Iron was detected in 2 of 110 well samples at levels that exceed the SMCL of 300 ppb. These samples were collected when the well was not actively supplying the distribution system, and the high iron detections represent stagnant water standing in the casing and not the water supplied to our customers. Iron's SMCL was set to protect you against unpleasant aesthetic effects, such as color, taste, odor, and the staining of plumbing fixtures and clothing when washed. Exceeding this SMCL does not pose a health risk.

<sup>7</sup>Currently, there is no primary MCL for TCP, but there is a notification level because it is a constituent of interest. Cal Water is working closely with the Department of Public Health, conducting extensive monitoring, and investigating acceptable treatment methods. Some people who use water containing TCP in excess of the notification level over many years may have an increased risk of getting cancer, based on laboratory studies.

**HOW TO READ THIS TABLE**

We test your water for more than 100 regulated contaminants. The table in this report lists only those that were detected.

The table shows water quality test results divided into two main sections: "primary standards" and "secondary standards." Primary standards protect public health by limiting the levels of constituents in drinking water. Secondary standards are limits for substances that could affect the water's taste, odor, or appearance.

**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 (USEPA).

**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 are 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.

**Notification Level (NL):** A health-based advisory level for an unregulated contaminant in drinking water. It is used by the California Department of Public Health to provide guidance to drinking water systems.

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

**Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other required action by the water provider.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**WATER HARDNESS**

Water is considered soft if its hardness is less than 75 parts per million (ppm), moderately hard at 75 to 150 ppm, hard at 150 to 300 ppm, and very hard at 300 ppm or higher. The water in your service area ranged from 51 to 250 ppm (3.0 to 14.6 grains per gallon), with an average of 105 ppm (6.1 grains per gallon).

Water's hardness varies with its source. Hard water is not harmful to health, so the choice to buy a water softener is an aesthetic one. However, some water softeners add salt to the water, and this can cause problems at wastewater treatment plants. Additionally, people on low-sodium diets should be aware that some water softeners increase the sodium content of the water.

µS/cm = measure of specific conductance  
 n/a = not applicable  
 ND = not detected  
 NTU = nephelometric turbidity unit

pCi/L = picoCuries per liter (measure of radioactivity)  
 ppb = parts per billion (micrograms per liter)  
 ppm = parts per million (milligrams per liter)  
 SMCL = secondary maximum contaminant level