

Quality. Service. Value.®



2016 Water Quality Report

Antelope Valley District
Lake Hughes

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



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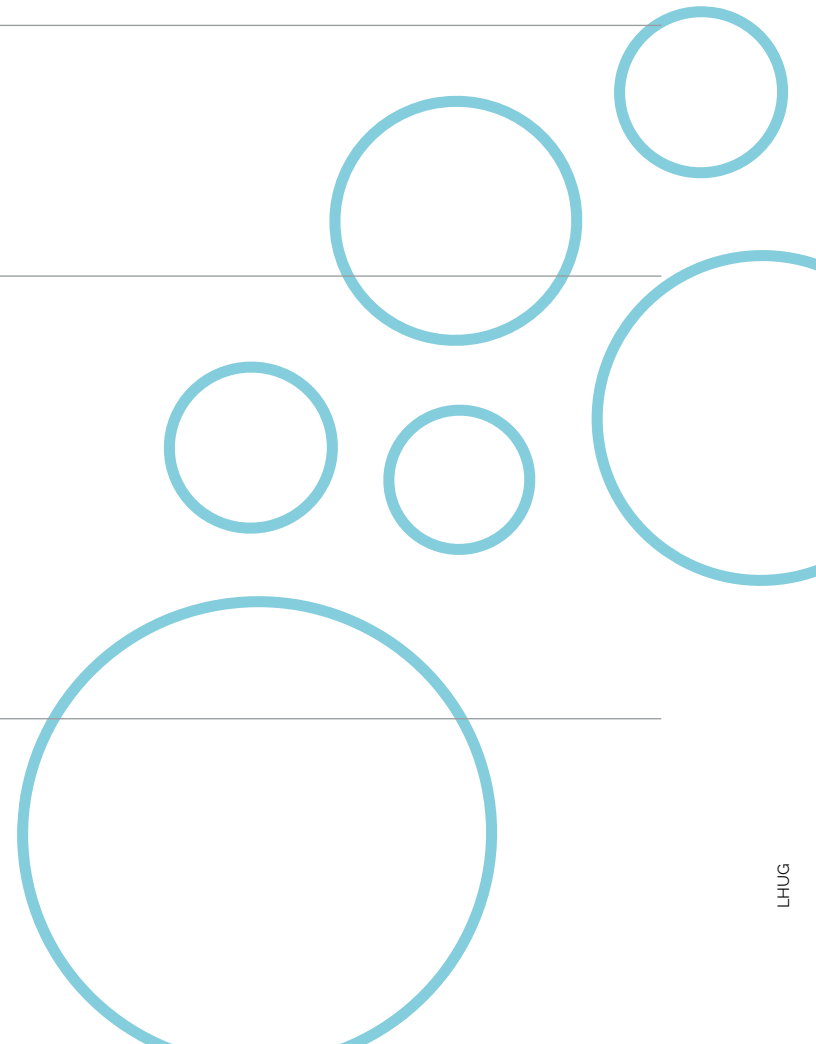
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Welcome



At California Water Service (Cal Water), we are committed to providing our customers with a reliable supply of high-quality water, 24 hours per day, 7 days per week, 365 days per year. With that in mind, we strive to deliver quality, service, and value in everything we do. This rings especially true when it comes to your water quality, because protecting our customers' health and safety is our highest priority.

Quality: We have rigorous safeguards in place to ensure the water we provide to you meets or surpasses increasingly stringent water quality standards. In California, we conducted 408,168 tests on 61,528 water samples for 326 constituents last year. **We are pleased to confirm that, in 2016, we met every primary and secondary state and federal water quality standard.**

Service: We work hard to make sure that this high-quality water supply is there any time customers turn on the tap. That means maintaining and upgrading the infrastructure to ensure it reliably moves water from the source to your tap. It also means having dedicated and skilled professionals here to assist you both with routine service needs and if there is ever an after-hours emergency. And, it means having robust conservation program with tools and rebates to help you use water efficiently – especially important since we live in a traditionally drier climate.

Value: While the costs to provide water service continues to increase across the country, we are working to ensure that our water stays affordable. We do this in part by investing in infrastructure that is built to last, maintaining it, and replacing equipment when it is nearing the end of its useful life. We also work to find cost-effective solutions to secure, test, treat, store, and deliver the water to you, all so that we can continue to serve you for less than a penny per gallon in nearly all of our service areas.

This annual water quality report shows any constituents that were detected in your water in 2016, and how your water compares to state and federal water quality standards. This report also provides information about the steps we take to protect your health and safety and answers questions you may have about your water quality.

If you have any questions or concerns, you can contact us by phone or email, online at www.calwater.com, or in person at our local Customer Center. For important water service announcements, please visit our web site or watch for information in your monthly bill, and be sure your contact information is up to date by visiting ccu.calwater.com.

Sincerely,

Chris Whitley, Local Manager, Antelope Valley District

ANTELOPE VALLEY DISTRICT 5015 WEST AVENUE L-14, UNIT 2 QUARTZ HILL, CA 93536 (661) 943-9001

Your Water System

We serve approximately 1,400 customer connections in our Fremont Valley, Grand Oaks, Lancaster, Lake Hughes, and Leona Valley water systems.

Most of the water we provide is pumped from local aquifers by wells located throughout our service areas. The Lake Hughes system includes three active groundwater wells and two storage tanks. Cal Water proactively maintains and upgrades our facilities to ensure a reliable, high-quality supply.

If you have any questions, suggestions, or concerns, please contact our local Customer Center, either by phone or through the contact link at www.calwater.com.

USING WATER WISELY

Although the Governor declared the end to the drought in most of California this year, it's important that we keep making conservation a way of life, as we live in a traditionally dry climate. Using water wisely will ensure that we have enough water in dry years and for generations to come.

Cal Water has a robust water conservation program that includes rebates, kits, and other tools to help our customers save water. Visit www.calwater.com/conservation for details.



WATER QUALITY LABORATORY

Water professionals collect samples from throughout the water system for testing at our state-of-the-art water quality laboratory, which is certified through the stringent Environmental Laboratory Accreditation Program (ELAP). Scientists, chemists, and microbiologists test the water for more than 140 constituents with equipment so sensitive it can detect levels as low as one part per trillion. In order to maintain the ELAP certification, all of our scientists must pass blind-study proficiency tests each year for every water quality test performed. Water quality test results are entered into our Laboratory Information Management System (LIMS), a sophisticated software program that enables us to react quickly to changes in water quality and analyze water quality trends in order to plan effectively for future needs.

CROSS-CONNECTION CONTROL

To ensure that the high-quality water we deliver is not compromised in the distribution system, Cal Water has a robust cross-connection control program in place. Cross-connection control is critical to ensuring that activities on customers' properties do not affect the public water supply. Our cross-connection control specialists ensure that all of the existing backflow prevention assemblies are tested annually, assess all non-residential connections, and enforce and manage the installation of new commercial and residential assemblies. Last year, our specialists oversaw installation of 2,795 new assemblies and testing of 36,293 backflow prevention assemblies company-wide.

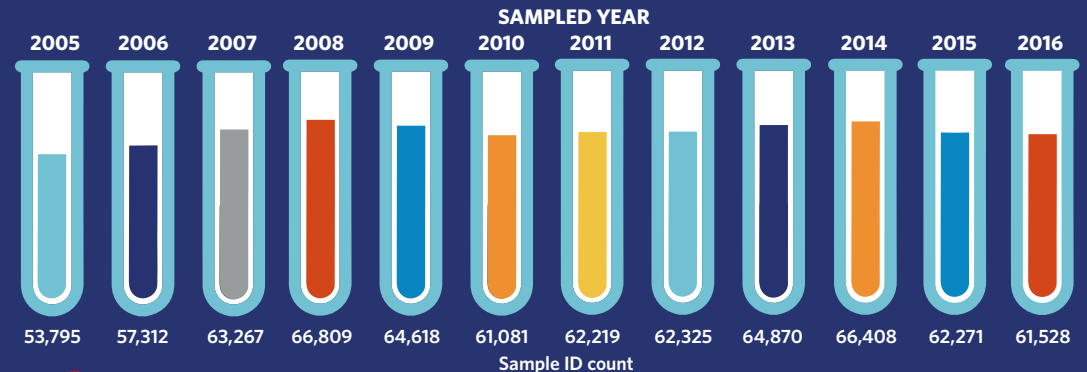
Our customers are our first line of defense in preventing water system contamination through backflow. A minor home improvement project can create a potentially hazardous situation, so careful adherence to plumbing codes and

standards will ensure the community's water supply remains safe. Please be sure to utilize the advice or services of a qualified plumbing professional.

Many water use activities involve substances that, if allowed to enter the distribution system, would be aesthetically displeasing or could present health concerns. Some of the most common cross-connections are:

- Garden hoses connected to a hose bib without a simple hose-type vacuum breaker (available at a home improvement store)
- Improperly installed toilet tank fill valves that do not have the required air gap between the valve or refill tube
- Landscape irrigation systems that do not have the proper backflow prevention assembly installed on the supply line

Number of samples collected



DWSAPP

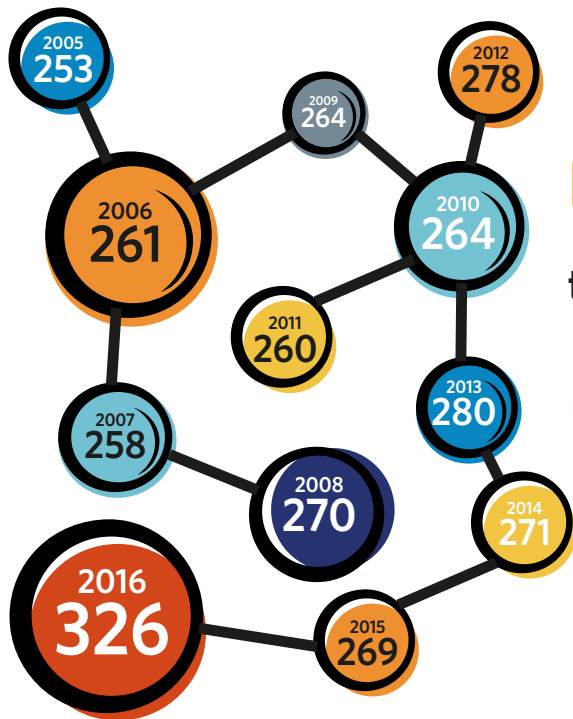
In August 2001 and December 2002, Cal Water submitted to the Division of Drinking Water (DDW) a Drinking Water Source Assessment and Protection Program (DWSAPP) report for each water source in the water system. The DWSAPP report identifies possible sources of contamination to aid in prioritizing cleanup and pollution prevention efforts. All reports are available for viewing or copying at our Customer Center.

The water sources in your district are considered most vulnerable to:

- Schools
- High-density housing
- Recreational activities
- Wastewater
- Grazing
- Agriculture
- Urban/stormwater runoff
- Wildlife
- Known contaminant plumes
- Above- and underground storage tanks
- Historic gas stations

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





Number of constituents tested annually since 2005

SAMPLED YEAR
PARAMETER
COUNT

FLUORIDE

State law requires Cal Water to add fluoride to drinking water if public funding is available to pay for it, and it is a practice endorsed by the American Medical Association and the American Dental Association to prevent tooth decay.

In this area, low levels of fluoride occur naturally, so Cal Water doesn't add any to the water supply. Show the table in this report to your dentist to see if he or she recommends giving your children fluoride supplements.

More information about fluoridation, oral health, and related issues can be found on the DDW web site at www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml. For general information on water fluoridation, visit us online at www.calwater.com.

Water Hardness

We use water testing equipment so sensitive it can detect levels as low as **1 part per trillion.**



That's equivalent to:

in **32,000** years.

Hardness is a measure of the magnesium, calcium, and carbonate minerals in the water. 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 current water quality table for your service area shows an average hardness of 408 ppm.

Hard water is generally not a health concern, but it can have an impact on how well soap lathers and is significant for some industrial and manufacturing processes. Hard water may also lead to mineral buildup in pipes or water heaters.

Some people with hard water opt to buy a water softener for aesthetic reasons. However, some water softeners add salt to the water, which can cause problems at wastewater treatment plants. In addition, people on low-sodium diets should be aware that some water softeners increase the sodium content of the water.



Possible Contaminants

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 United States Environmental Protection Agency (EPA) 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 EPA and DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DDW 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, and 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. EPA/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.

About Lead

As the water quality crisis in Flint, Michigan, continues to be top of mind for many Americans, Cal Water wants to assure you about the quality of your water.

We are compliant with health and safety codes mandating use of lead-free materials in water system replacements, repairs, and new installations. We have no known lead service lines in our systems. We test and treat (if necessary) water sources to ensure that the water delivered to customer meters meets all water quality standards and is not corrosive toward plumbing materials.

The water we deliver to your home meets lead standards, but what about your home's plumbing? In California, lead in drinking water comes primarily from materials and components used for in-home plumbing (for example, lead solder used to join copper plumbing, and brass and other lead-containing fixtures). Therefore, the Lead and Copper Rule is a critical part of our water quality monitoring program. This rule requires us to test water inside a representative number of homes that have plumbing most likely to contain lead and/or lead solder. This test, along with other water quality testing, tells us if the water is corrosive enough to cause lead from home plumbing to leach into the water. If the Action Level (the concentration of a contaminant which, when exceeded, triggers action which a water system must follow before it becomes a health concern) is exceeded, either at a customer's home or system-wide, we work with the customer to investigate the issue. If the problem is system-wide, we will implement corrosion control treatment at the source before the lead levels create a health issue.

If your home's plumbing contains lead piping or pipe fittings, lead solder, or brass fixtures that may contain lead, 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 by a lab. 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.

Additionally, in January 2017, the State of California issued new guidelines on lead testing in schools. We are committed to supporting our school districts' efforts to protect students and ensure that the drinking water at their school sites meet lead limits. We have already begun working with school districts serving kindergarten through 12th grade to develop sampling plans unique to each school site, test samples, and conduct follow-up monitoring if any school needs to take corrective action on its plumbing fixtures. Beginning in next year's water quality report, we will publish a summary of local school lead testing in the prior year. For more information, please see our [Testing for Lead in Schools](#) web page.

In your system, results from our lead monitoring program, conducted in accordance with the Lead and Copper Rule, were non-detectable for the presence of lead.

Key Definitions

Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary MCLs protect public health and are set as close to the PHGs (or MCLGs) as are economically and technologically feasible. Secondary MCLs relate to the odor, taste, and appearance of drinking water.

In Compliance

Does not exceed any applicable primary MCL, secondary MCL, or action level, as determined by DDW. For some compounds, compliance is determined by averaging the results for one source over a one-year period.

Regulatory Action Level (AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other required action by the water provider.

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 EPA.

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.

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.

Notification Level (NL)

A health-based advisory level for an unregulated contaminant in drinking water. It is used by DDW 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.

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's Office of Environmental Health Hazard Assessment without regard to cost or available detection and treatment technologies.

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Table Introduction

Cal Water tests your water for more than 140 regulated contaminants and dozens of unregulated contaminants. This table lists only those contaminants that were detected.

In the table, water quality test results are divided into two major sections: “Primary Drinking Water Standards” and “Secondary Drinking Water Standards and Unregulated Compounds.” Primary standards protect public health by limiting the levels of certain constituents in drinking water. Secondary standards are set for substances that don’t impact health but could affect the water’s taste, odor, or appearance. Some unregulated substances (hardness and sodium, for example) are included for your information.

TABLE KEY

μS/cm	microsiemens per centimeter (measure of specific conductance)
cyst/L	cysts per liter
n/a	not applicable
ND	not detected
NTU	nephelometric turbidity unit
pCi/L	picoCuries per liter (measure of radioactivity)
ppm	parts per million (milligrams per liter)
ppb	parts per billion (micrograms per liter)
ppt	parts per trillion (nanograms per liter)
SMCL	secondary maximum contaminant level
TON	threshold odor number



2016 Water Quality Table

Primary Drinking Water Standards

Radiological	Year Tested	Unit	MCL	PHG (MCLG)	In Compliance	Range	Average	Source of Substance
Gross alpha particle activity	2014–2016	pCi/L	15	(0)	Yes	3.2–12	7.6	Erosion of natural deposits
Uranium	2014–2015	pCi/L	20	0.43	Yes	3.4–5.4	4.4	Erosion of natural deposits
Inorganic Chemicals	Year Tested	Unit	MCL (SMCL)	PHG (MCLG)	In Compliance	Range	Average	Source of Substance
Aluminum	2014–2016	ppm	1 (0.2)	0.6	Yes	ND–0.06	ND	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic	2014–2016	ppb	10	0.004	Yes	ND–2.7	ND	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium	2014–2016	ppm	1	2	Yes	0.07–0.23	0.17	Discharges of oil-drilling waste and from metal refineries; erosion of natural deposits
Beryllium	2014–2016	ppb	4	1	Yes	ND–3.5	ND	Discharge from metal refineries, coal-burning factories, and electrical, aerospace, and defense industries
Cadmium	2014–2016	ppb	5	0.04	Yes	ND–3.5	ND	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories and metal refineries; runoff from waste batteries and paints
Chromium	2015–2016	ppb	50	(100)	Yes	ND–12	ND	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride	2014–2015	ppm	2	1	Yes	0.6–1	0.8	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as nitrogen)	2016	ppm	10	10	Yes	0.8–4.3	1.6	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Disinfection Byproducts	Year Tested	Unit	MCL	PHG (MCLG)	In Compliance	Range	Highest Annual Average	Source of Substance
Total trihalomethanes	2016	ppb	80	n/a	Yes	0.7–5.9	5.9	Byproduct of drinking water chlorination

2016 Water Quality Table

(Continued)

Disinfectant and DBP Precursor	Year Tested	Unit	MRDL	MRDLG	In Compliance	Range	Average	Source of Substance
Chlorine	2016	ppm	4	4	Yes	0.5–2.0	1.1	Drinking water disinfectant added for treatment
Microbiological	Year Tested	Unit	MCL	PHG (MCLG)	In Compliance	Highest Monthly		Source of Substance
Total coliform (systems with <40 samples/month) (Total Coliform Rule)	2016	positive samples	1	(0)	Yes	0		Naturally present in the environment

Other Regulated Substances

Metals	Year Tested	Unit	AL	PHG (MCLG)	In Compliance	90 th Percentile	Samples > AL	Source of Substance
Copper	2016	ppm	1.3	0.3	Yes	0.26	1 of 10	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	2016	ppb	15	0.2	Yes	ND	0 of 10	Internal corrosion of household plumbing systems; discharge from industrial manufacturers; erosion of natural deposits

2016 Water Quality Table

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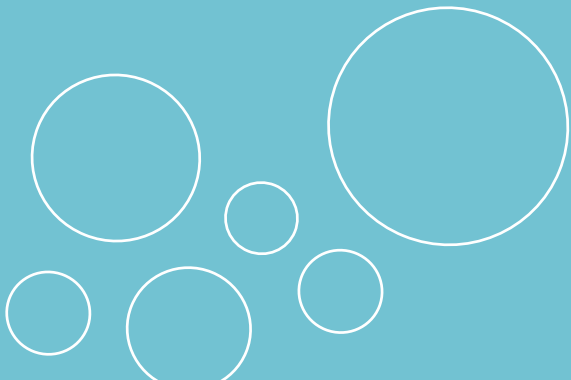
Secondary Drinking Water Standards

Inorganic Chemicals	Year Tested	Unit	SMCL	PHG (MCLG)	In Compliance	Range	Average	Source of Substance
Aluminum	2014–2016	ppm	1 (0.2)	0.6	Yes	ND–0.06	ND	Erosion of natural deposits; residue from some surface water treatment processes
Calcium	2015–2016	ppm	n/a	n/a	Yes	71.8–100	80	Erosion of natural deposits
Chloride	2015–2016	ppm	500	n/a	Yes	8.9–110	84	Erosion of natural deposits; seawater influence
Hardness	2015–2016	ppm	n/a	n/a	Yes	290–460	408	Erosion of natural deposits
Manganese	2016	ppb	50	n/a	Yes	0–46	ND	Leaching from natural deposits
pH	2016	Units	n/a	n/a	Yes	6.5–8.1	7.3	Inherent characteristic of water
Sodium	2015–2016	ppm	n/a	n/a	Yes	22–91	30	Erosion of natural deposits; seawater influence
Specific conductance	2014–2016	µS/cm	1600	n/a	Yes	610–1200	1062	Erosion of natural deposits; seawater influence
Sulfate	2015–2016	ppm	500	n/a	Yes	43–100	84	Runoff/leaching from natural deposits; industrial wastes
Total dissolved solids	2015–2016	ppm	1000	n/a	Yes	350–720	605	Runoff/leaching from natural deposits
Turbidity (groundwater)	2016	NTU	5	n/a	Yes	ND–3.5	0.53	Soil runoff
Unregulated Compounds	Year Tested	Unit	SMCL	PHG (MCLG)	In Compliance	Range	Average	Source of Substance
Strontium	2016	ppb	n/a	n/a	Yes	610–1400	1103	Erosion of natural deposits

Thank you.

Thanks for taking the time to learn more about your water quality! Even more information awaits you at www.calwater.com. Visit our web site to get information about your account, water use history, water rates, and water system.

You will also find water-saving tips and news about water conservation programs and rebates available in your area.



- [> Conservation Resources](#)
- [> Lead in water](#)
- [> Water treatment and disinfection](#)
- [> Protecting the water supply](#)