# 2012 Water Quality Report
# **Willows District**

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

# 2012 Water Quality Report

## Willows District

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Willows District
1070 West Wood Street, Suite A-1
Willows, CA 95988
(530) 934-4735
www.calwater.com

At California Water Service Company (Cal Water), we are committed to improving the quality of life in the communities we serve by providing a reliable supply of high-quality water, participating actively in our communities, and operating in a way that demonstrates our respect for the environment.

"Improving the quality of life" may seem like a tall order for a water utility, but imagine how different life would be if you had to carry the water you needed from the source to your home… if there wasn't a hydrant nearby to protect you from fire… if your tap went dry whenever the weather did.

Most importantly, imagine how your life would be affected if the water wasn't tested and treated to make sure it was safe to drink. That's where this report comes in, because it shows how your water compares to state and federal water quality standards. **We are pleased to confirm that your water met or surpassed all primary and secondary water quality standards in this reporting period.** This report also provides additional information about the steps we take to protect your health and safety and answers questions you may have about your water quality.

Water doesn't magically appear when you turn on the tap. It takes a dedicated team of professionals and a well-maintained system to make it happen. That's what we do, and we take our responsibility for doing it very seriously. Because we are committed to improving the quality of life in the communities we serve.

We are making this report available online to save paper; however, it has been designed in a way that makes it easy for you to print at home. Or, if you prefer, you may call us to request a hard copy. Also, contact us by phone or through our web site if you have any questions, suggestions, or concerns. As always, we ask you to review bill inserts and our web site for important information about your water and announcements about any water-related events or meetings.

Sincerely,
Rosanna Marino
Local Manager
Willows District

## About Your Water System

Cal Water has provided high-quality water utility services in Willows since 1927. To meet the needs of our Willows customers, we utilize seven wells, two storage tanks, and 35.7 miles of pipeline to pump and deliver two million gallons of local groundwater per day.

Cal Water proactively maintains and upgrades its 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.

## Inside the 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. Scientists, chemists, and microbiologists test the water for more than 140 contaminants with equipment so sensitive it can detect levels as low as one part per trillion.

Water quality 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.

One part per trillion is equivalent to one square inch in 250 square miles, three seconds in 100,000 years, or one drop of water in 20 Olympic-size pools.

# Types of Treatment

We don't take a "one-size-fits-all" approach to water treatment; rather, we work diligently to identify the best, most cost-effective treatment required for each water source. In some areas, we operate very sophisticated facilities, including microfiltration, advanced oxidation, and ultraviolet units; in other areas, we use very simple, straightforward treatment techniques, such as granular-activated carbon filtration. Surface water sources, such as lakes and reservoirs, typically require more complex treatment because they are exposed to the natural environment. Treatment for water from groundwater wells varies.

# The Disinfection Process

All of our water, whether it comes from surface water or groundwater sources, is disinfected to protect you from waterborne diseases. Disinfection of drinking water has made many once-common diseases, like typhoid and cholera, a thing of the past in the United States and other developed countries.

Chlorine is a common disinfectant used to treat the water. If you detect a chlorine taste or smell in your water, try refrigerating it before drinking.

# Protecting Our Water

We have a program in place to ensure that protective backflow devices are installed at certain properties to prevent contaminants from the property from flowing back into the water system. To determine whether a backflow prevention assembly is required, we assess how water is used and pipes are configured.

But protecting our water is everyone's business. Anything that goes onto lawns, down storm drains, or into the trash can impact the water supply. So please, use lawn and garden fertilizers judiciously. Take unused medication to your doctor, pharmacy, or community take-back program for safe disposal. And properly dispose of antifreeze, oil, and any other chemical you use in the garage or around the house.

# 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.

## Exceeded Standard

Out of compliance with a primary MCL, a secondary MCL, or an action level, as determined by the California Department of Public Health. For some compounds, compliance is determined by averaging the results for one source over a year.

## 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 United States Environmental Protection Agency (USEPA).

## 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 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.

## 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.

# 2012 Water Quality Table

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 main 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.

| Primary Drinking Water Standards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Radiological | Year Tested | Unit | MCL (SMCL) | PHG (MCLG) | Exceeded Standard? | Range | Average | Source of Substance |
| Gross alpha particle activity | 2008–2012 | pCi/L | 15 | (0) | No | ND–4.7 | 0.29 | Erosion of natural deposits |
| Radium 228 | 2008–2009 | pCi/L | 5 | 0.019 (0) | No | ND–1.5 | 0.2 | Erosion of natural deposits |
| Inorganic Chemicals | Year Tested | Unit | MCL (SMCL) | PHG (MCLG) | Exceeded Standard? | Range | Average | Source of Substance |
| Arsenic | 2011–2012 | ppb | 10 | 0.004 | No | ND–2 | 0.3 | Erosion of natural deposits; runoff from orchards; glass and electronics production waste |
| Barium | 2011–2012 | ppm | 1 | 2 | No | 0.11–0.2 | 0.15 | Discharges of oil-drilling waste and from metal refineries; erosion of natural deposits |
| Chromium | 2012 | ppb | 50 | (100) | No | 13–30 | 24 | Discharge from steel and pulp mills and chrome plating; erosion of natural deposits |
| Fluoride | 2011–2012 | ppm | 2 | 1 | No | 0.2–0.4 | 0.3 | Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories |
| Nitrate (as nitrate)[1] | 2012 | ppm | 45 | 45 | No | ND–25 | 15.5 | Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits |
| Disinfectant and DBP Precursor | Year Tested | Unit | MRDL | MRDLG | Exceeded Standard? | Range | Average | Source of Substance |
| Chlorine | 2012 | ppm | 4 | 4 | No | 0.2–0.7 | 0.5 | Drinking water disinfectant added for treatment |

[1]The average nitrate level was 15.5 ppm, with a maximum level of 25 ppm. We are closely monitoring 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.

Table Key
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)
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

There's more! Keep clicking to the next page!

## Other Regulated Substances

| Metals | Year Tested | Unit | AL | PHG (MCLG) | Exceeded Standard? | 90th Percentile | Samples > AL | Source of Substance |
|---|---|---|---|---|---|---|---|---|
| Copper | 2010 | ppm | 1.3 | 0.3 | No | 0.15 | 0 of 24 | 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 |
|---|---|---|---|---|---|---|---|---|
| Calcium | 2011–2012 | ppm | n/a | n/a | No | 22–44 | 30 | Erosion of natural deposits |
| Chloride | 2011–2012 | ppm | 500 | n/a | No | 6–21 | 13 | Erosion of natural deposits; seawater influence |
| Chromium 6 | 2010–2011 | ppb | n/a | n/a | No | 14–18 | 15.8 | Discharge from steel and pulp mills and chrome plating; erosion of natural deposits |
| Hardness | 2011–2012 | ppm | n/a | n/a | No | 150–230 | 187 | Erosion of natural deposits |
| Magnesium | 2011–2012 | ppm | n/a | n/a | No | 21–32 | 27 | Erosion of natural deposits |
| Odor | 2011–2012 | Units | 3 | n/a | No | ND–1 | 0.14 | Naturally occurring organic matter |
| pH | 2011–2012 | Units | n/a | n/a | No | 7.5–8.6 | 7.9 | Inherent characteristic of water |
| Sodium | 2011–2012 | ppm | n/a | n/a | No | 37–60 | 51 | Erosion of natural deposits; seawater influence |
| Specific conductance | 2011–2012 | µS/cm | 1600 | n/a | No | 420–650 | 540 | Erosion of natural deposits; seawater influence |
| Sulfate | 2011–2012 | ppm | 500 | n/a | No | 14–63 | 37 | Runoff/leaching from natural deposits; industrial waste |
| Total dissolved solids | 2011–2012 | ppm | 1000 | n/a | No | 240–380 | 313 | Runoff/leaching from natural deposits |
| Turbidity (groundwater) | 2011–2012 | NTU | 5 | n/a | No | ND–2.1 | 0.05 | Soil runoff |

The lab keeps busy

We conduct more than 380,000 water quality tests each year.

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µS/cm = measure of specific conductance
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SMCL = secondary maximum contaminant level

# 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 (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 (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH 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.

# About Lead

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 by a private 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.

Most quality standards assume that you drink two liters of tap water every day for 70 years.

# Drinking Water Source Assessment and Protection Program

By the end of 2002, Cal Water had submitted to the California Department of Public Health 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 the following activities associated with contaminants detected in the water supply: agricultural drainage, parks, RV parks, sewer collection systems, schools, chemical/petroleum processing or storage, farm chemical distributor/application service, pesticide/fertilizer/petroleum storage and transfer areas, fertilizer/pesticide/herbicide application, grazing, septic systems, and irrigated crops.

The water sources are considered most vulnerable to the following activities, for which no associated contaminant has been detected: fleet/truck/bus terminals, utility stations (maintenance areas), underground storage tanks (confirmed leaking tanks), above-ground storage tanks, gas stations, automobile repair shops, chemical/petroleum pipelines, machine shops, dredging, and wells (water supply and agricultural).

We encourage customers to join us in our efforts to prevent water pollution and protect our most precious natural resource. A copy of this assessment may be viewed at:

California Department of Public Health
Valley District Office
364 Knollcrest Drive
Redding, CA 96002

In the know

Our scientists and chemists have a combined 192 years of analytical experience.

# In the News

News stories about water quality can raise more questions than they answer, mainly because the news media can dedicate only so much time and space to each story, even though the subject matter can be quite complex. During the past year, we've seen stories about pharmaceuticals, chromium 6, and total trihalomethanes.

## Pharmaceuticals

A recent study detected trace amounts of pharmaceuticals in some water sources throughout the country. According to one source, at the levels detected, a person would have to drink "more than 4.4 million gallons of treated municipal effluent to accidentally ingest the equivalent of one over-the-counter headache tablet."* More research needs to be done to determine whether such miniscule amounts of these substances in drinking water can affect public health, but in the meantime, Cal Water encourages you to take unused medicines to your doctor, pharmacy, or local take-back program to keep them out of water supplies.

## Chromium 6

Chromium 6 occurs naturally in many water sources. It is also used to produce stainless steel and textile dyes, preserve wood, and tan leather, among other things. Currently, there is no water quality standard for chromium 6; however, there is a standard for total chromium. (Chromium 6 is a subset of total chromium, so chromium 6 levels are always lower than total chromium levels.)

The California Department of Public Health (CDPH) is determining the standard by balancing the current understanding of the health effects with the cost for treatment, and is expected to establish a draft standard for chromium 6 in 2013. Cal Water has been collaborating with the Water Research Foundation on a pilot study to test various treatment methods and assess costs in preparation for meeting the new standard.

## Total Trihalomethanes

Although drinking water disinfection is critical to protecting the public from serious waterborne illnesses and Cal Water is required to maintain adequate levels of disinfectant in the water system, the process can result in the formation of disinfection byproducts, such as total trihalomethanes, or TTHMs. The United States Environmental Protection Agency (USEPA) and CDPH limit the level of TTHMs that can be present in water, because when consumed at certain levels over long periods of time, they can pose health risks. The key is to remove harmful bacteria through disinfection without creating disinfection byproducts at levels that could pose health risks. So, to limit the formation of disinfection byproducts, Cal Water treats surface water to remove organic matter that can cause TTHMs to form, flushes mains and cleans storage tanks, and operates the system to reduce the amount of time that water is stored in storage tanks.

*Staff Report, California Regional Water Quality Control Board Santa Ana Region, March 22, 2013.

# Q & A

## Why Does My Water Look Like That?

### Why does it look like it has sand in it?

Dirt or sand can occur naturally in groundwater sources; it can also get into water lines during repairs. Cal Water flushes water lines to help remove sediment, but if it makes its way into your home plumbing, you should let the water run until it clears. The same goes for faucets that haven't been used for a while, which allows rust or residue from the pipes to collect.

### Why does it look milky?

Milky or cloudy water is generally caused by harmless air bubbles. If the water is allowed to sit, the air will dissipate and the water will clear.

### Why does it seem to be colored?

Minerals can give the water a slight color. Secondary standards are set for substances that can affect the aesthetic qualities of the water but do not pose a health risk.

Color can also be related to your home plumbing. For example, galvanized pipes or pipes that are corroded due to changes in water quality caused by water softeners can change the appearance of your water.

## Why Does My Water Do That?

### Why does it leave spots on my dishes?

Spots are caused by minerals in hard water that remain after the water has evaporated. They can be minimized by a dishwasher rinse agent and removed with vinegar.

### Why does it make my coffee look oily?

Oily-looking coffee usually occurs when the coffee maker needs to be cleaned. Try running vinegar and water through it as directed by the manufacturer.

## Why Does My Water Smell Like That?

### Why does it smell like chlorine?

Chlorine is used to remove harmful bacteria from the water. Try refrigerating a pitcher of water to reduce the chlorine odor.

### Why does it smell bad?

Your water should not smell bad. If the odor is in your hot water only, your water heater may need to be adjusted, flushed, or repaired according to manufacturer directions. If the odor is in both the hot and cold water, please call our Customer Center so that we may investigate.

## Should I Buy a Home Filtration Unit?

Home water treatment units are often used to improve the aesthetic qualities of the water, but according to the United States Environmental Protection Agency, they are rarely necessary for health reasons. If you choose to install a home treatment unit, be sure to follow the manufacturer's maintenance instructions, because improperly maintained units can cause water quality problems. For example, bacteria can grow in carbon filters that are not replaced as recommended.

## Why Does Cal Water Flush Water From Fire Hydrants?

"Flushing" is a procedure in which certain fire hydrants are opened under controlled conditions to remove minerals and sediment from the water lines. Fire hydrants are also opened occasionally in order to ensure that they are operating properly. Flushing may seem wasteful, but it is an important and necessary activity that is endorsed by the American Water Works Association and conducted in accordance with guidelines set by the California Department of Public Health. If flushing is being conducted in your service area, you may notice a temporary decrease in water pressure. If you notice any discoloration or sediment in the water after flushing has occurred, allow water to run from your outside hose bib until it clears.

Bottle or tap?

Standards are no more stringent for bottled water, which costs 1,000 times as much as tap water.

## What's the Deal With 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, Cal Water does not add fluoride 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 current issues can be found on the CDPH web site at www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx. For general information on water fluoridation, visit us online at www.calwater.com.

## How Hard Is My Water?

Water's "hardness" is a measure of the amount of minerals (generally calcium and magnesium) it contains. 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 187 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, and this 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.

# For More Information, Visit **www.calwater.com**

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. Hope to see you soon!