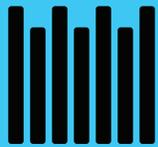


2012

WATER QUALITY REPORT



Every time you open the faucet to fill your glass with tap water, you can be proud that it is being delivered by an award-winning agency known for its reliability, efficiency, quality and “green approach.”





To our customers,

Each year, the City of Santa Ana Water Resources Division presents a Consumer Confidence Report (CCR), detailing the sources and quality of water it delivers to customers. We are especially excited to present this year's CCR (or water quality report) for several reasons.

As you may know, creating an environmentally friendly future is an important initiative for the City of Santa Ana. In keeping with our initiative, this is the first year the California Department of Public Health has allowed us to "go green" and deliver our water quality report in an electronic format. While print copies are available upon request, we hope you enjoy the convenience of viewing this report online.

Second, you will learn about a number of water improvement projects we completed last year that have earned awards and recognition by various prestigious organizations. This extraordinary recognition is a result of our hard work to continually improve the reliability and quality of our water service. The Water Resources Division looks to make its services touch everyone's lives in a positive way. We regularly explore ways to evaluate and improve efficiencies in our water system. We create opportunities to connect with you and your family, providing information that will assist you in becoming more "green." This includes delivering water conservation education to 9,000 elementary school students each year. And, we work closely with industrial and commercial customers to ensure they have reliable water service, which is crucial to their businesses.

Third, we are proud to report that since 1990, all the water we have served meets or exceeds state and federal drinking water requirements. Last year was no exception. In 2012, Santa Ana's tap water met all the drinking water health standards required by both the California Department of Public Health and the United States Environmental Protection Agency.

You will find a detailed chart summarizing year-round testing and monitoring of water in 2012. It lists the level at which contaminants were found in the water alongside the maximum allowable levels. A glossary of terms can help you better understand the chart and specific notes will elaborate on an entry's meaning when needed. We trust this report will not only help you make health-based decisions regarding your consumption of tap water, but will also offer water conservation measures and tips to save costs.

Sincerely,

Nabil Saba
Acting Water Resources Manager
Department of Public Works Agency
City of Santa Ana





SANTA ANA PUBLIC WORKS PROJECTS: AWARD WINNING

The Water Resources Division is proud of its role in protecting and maintaining the one element that is essential to our community’s safety, health, and quality of life: our water.

Just in the past year alone, we have earned the recognition of four prestigious organizations for our outstanding public works projects. These organizations have selected five Santa Ana projects from among hundreds of public works projects and programs in Southern California based on their accomplishments, innovative features, impact on quality life, as well as exceptional engineering performance. Even our tap water is award winning. For two consecutive years, we’ve received a top award for delivering quality and good tasting tap water!

Below is list of our awards. You can read more about the accomplishments of each award-winning project in the adjacent article. Every time you open the faucet to fill your glass with tap water, you can be proud that it is being delivered by an award-winning agency known for its reliability, efficiency, quality and “green approach.”

2012-2013 Awards

<i>Award</i>	<i>Organization</i>	<i>Project</i>
2012 Project of The Year Awards	The Southern California Chapter of the American Public Works Association (APWA)	MacArthur Boulevard/ State Route 55 Interchange Ramp Memory Lane Road Diet Diamond Park / Catalina Street
Engineering Project Achievement Awards	Orange County Engineering Council (OCEC)	Diamond Park Catalina Street West Pump Station
2013 Resource Efficiency and Community Service Award	California Municipal Utilities Association (CMUA)	Deep Wells and Booster Station Program
Silver Award-Best Municipal Water	Berkeley Springs International Water Tasting Festival	Santa Ana’s Tap Water!



PUBLIC WORKS PROJECTS: TODAY + TOMORROW

The Public Works Agency is continually making improvements to Santa Ana's infrastructure. Nearly all improvement projects recently completed have received awards from various organizations for its innovative features, exceptional engineering performance, reliability, as well as impact on quality of life and community service. Here's a brief look at those projects completed and planned.

Completed Projects

1. MacArthur Boulevard/State Route 55 Interchange Ramp Widening¹

The wider ramp increased capacity to improve traffic flow and air quality for commuters and surrounding residential and business areas.

The project included cost saving and water conserving landscape systems.

The project rehabilitated pavement on the ramp and street to improve a safer and smoother ride for drivers.

It added water conserving landscape systems and safety improvements including signage, delineators, guard railings and ramp meters.

2. Memory Lane Road Diet¹

The City installed a Class II Bikeway on Memory Lane from Bristol Street to Flower Street to address residents' concerns of speeding and street racing in an area used by bicyclists.

The project was funded under the City's Residential Street Program, which allowed for a complete repaved street with a neighborhood supported lane reduction.

3. Diamond Park & Catalina Street Water Main Improvements^{1,2}

Santa Ana rescued two communities that were serviced by two dysfunctional private water companies and unable to deliver safe drinking water.

The City now provides clean, safe and reliable tap water to 145 residences in these communities.

The project was 100% state grant funded. It was a collaborative effort between State, County and City officials including support from Assemblyman Jose Solorio.

4. West Pump Station²

The project modernized the pump station, securing and extending the life of this vital City water facility. It represented a \$2.5 million investment in the City's infrastructure, partially funded by a federal grant.



5. Deep Wells and Booster Station Program ³

The program optimized the efficiency of the City's water system through state-of-the-art pump motor controls and software programs.

To date, it has saved the City 2.2 million kWh of energy and an estimated \$265,000 in energy costs per year.

These savings have been passed on to consumers who have had no water rate increases for two years.

The City earned nearly \$260,000 in rebates from the SCE (Southern California Edison) Standards Performance Contract Program.

It has reduced greenhouse gas emissions each year by an estimated 1,517 metric tons of carbon dioxide CO₂ which is equivalent to the annual energy use of 131 homes.

It has reduced the water main breaks and subsequent disruption of service to residents and businesses.

6. Fire Hydrant Maintenance Program

The City has 4,500 fire hydrants in its distribution system, used for fire protection.

Due to the City's computerized infrastructure and maintenance program, the ISO's Public Protection Classification program designated Santa Ana as a Class 1 fire system, the "best in class" in fire protection capability.

The biannual maintenance program includes testing, lubricating, painting, and repairing when needed, making the fire hydrants ready for fire protection at all times.

Future Water Projects

1. San Lorenzo Sewer Lift Station

The project will renovate the original lift station built in the 1960s, which has been used to pump sewage into the Orange County Sanitation District (OCSD) sewer trunk line.

The improvements of the new facility will:

- Provide a safer and more accessible working area for staff
- Significantly reduce chances of a major sewer spill
- Alleviate traffic congestion on Bristol Street for routine maintenance
- Improve the aesthetics of the area

2. Walnut Pump Station

The project will renovate the original pump station built in 1953, which has been used to pump water into the City's pipe system from an underground storage reservoir.

The proposed facility will be the first pump station built as a "green" building in Santa Ana, certified for its water and energy efficiency.

The project will improve the reliability of the City's water system and help ensure the City can handle emergencies such as fires.

3. Westminster Avenue Sewer Replacement

The project includes the construction of 3,400 feet of new sewer main to meet increased sewer demands.

Construction is expected to begin in summer 2013 pending Council approval.

A joint venture, the project will be designed and administered by the city of Santa Ana with the city of Garden Grove funding 68% of the cost.

¹ Received the American Public Works Association (APWA) 2012 Project of the Year Award

² Received the Orange County Engineering Council (OCEC) Engineering Project Achievement Award

³ Received the California Municipal Utilities Association (CMUA) 2013 Resource Efficiency and Community Service Award



A SYMBOL OF SANTA ANA'S RICH HERITAGE

Standing 153 feet tall as the City's welcome sign is the historic Santa Ana Water Tower. It is one of the most visible and highly recognizable landmarks in Orange County, situated on the corner of Poinsettia Avenue and 14th Street. The tower was erected in 1928, nearly 60 years after William Spurgeon established the town of Santa Ana on 74.27 acres of land purchased from the old Spanish land grant, Rancho Santiago de Santa Ana.

At that time, it was the primary repository of water for the approximate 30,000 residents of Santa Ana. And while its role in the City's water system today is less prominent, it holds an important place as a symbol of the City and its rich historical heritage. It marks the intersection of downtown and residential neighborhoods, the juncture of railways and highways...the crossroads of the old and new. The tower is one of more than 120 landmarks on the Santa Ana Register of Historic Properties. You can read more about Santa Ana's history by visiting the Santa Ana Historical Preservation Society at www.santaanahistory.com.

In addition to queries about the tower's history, the Water Resources Division receives many other questions from residents each year. Following are answers to some of the most common questions.

Q *Is it still in operation?*

A Yes. The City uses the tower to store approximately 800,000 gallons of water. It supplies water to the local area, which includes the Davis Elementary School where the tower is situated. The tower's capacity was reduced from its original 1 million gallons when a seismic retrofit was required to comply with safety standards.

Q *How safe is it?*

A The tower was retrofitted to meet all California seismic engineering standards. The City continues to monitor those standards for all updates and to ensure the tank meets those standards.

Q *What is the tower's role in our current water system?*

A It serves the water system in several ways. First, it provides a storage capacity of 800,000 gallons. Second, it helps sustain water pressure in the network of ground level and underground tanks by acting as a shock absorber to surges in the water system that can happen when valves and pumps turn on and off.

Q *Do you plan to keep it in service and for how long?*

A Yes, we do plan to keep it in service and anticipate it will be a part of our distribution system for many years. We inspect the tank annually, which includes engineer reviews for its functionality.



WHY IS WATER CONSERVATION IMPORTANT?

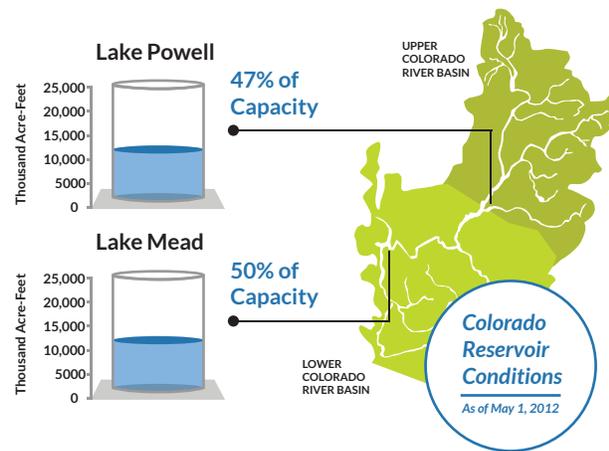
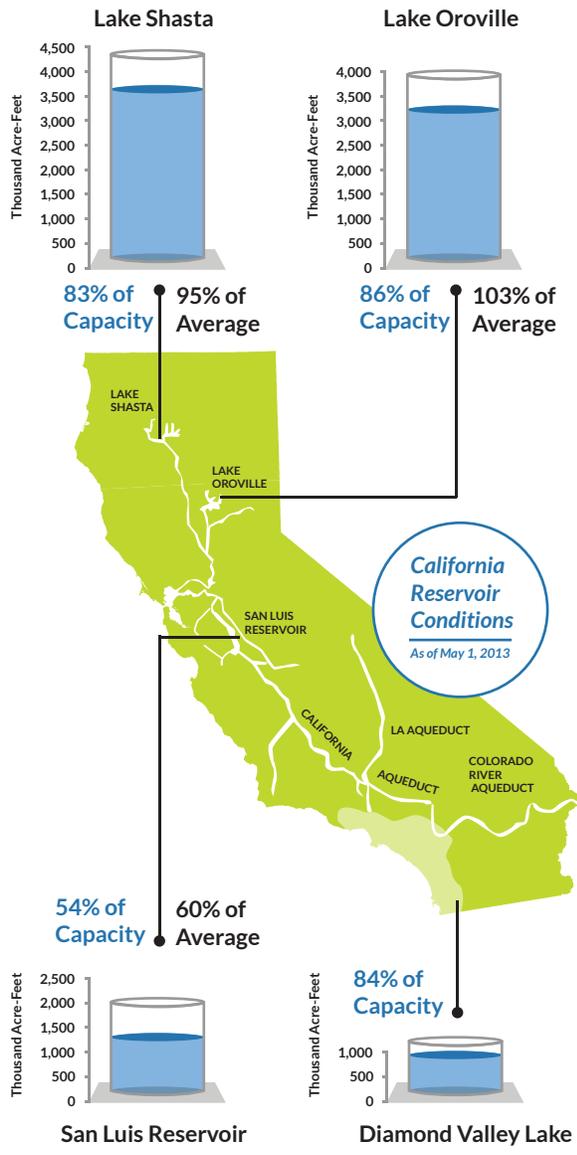
While most people acknowledge that conserving water is good practice, they may not realize how critical it really is. Just look at our current conditions. 2013 started out as a promising water year in California with an extremely wet November and December. However, the precipitation never materialized. Instead, it has turned very dry with California setting a new record (registering 2.2 vs. 17.1 inches of rain) for the driest January-February period in recorded history, dating back 90 years.

At the same time, conditions seem to be worsening along the Colorado River, which is in the midst of a 12-year drought. The Upper Colorado River Basin watershed is expected to yield less water this year, currently 78 percent of average, due to dry conditions. Storage in Lake Powell and Lake Mead—the river system’s two main reservoirs—is at 49 percent and 53 percent of average, respectively.

According to the Department of Water Resources, while reservoir storage will meet much of the state’s water demand this year, successive dry years would create drought conditions in some areas.

These persisting dry conditions is only a reminder that California is a drought-prone state where we have to make conservation

a way of life. Each of us can do our part to conserve this precious resource, and you can get started with the easy tips in this report. It’s that simple. It’s that important.





10 EASIEST TIPS TO CONSERVE WATER

Water is essential to our every day lives and our supply is limited. So please use water wisely. If each of us changed our water use habits, we could save billions of gallons of water.

Below are the easiest ways you can conserve water both inside your home and outdoors. There are also high efficiency devices you can use that will save a lot of water and money. A limited number of SoCal Water\$mart rebates are available to Santa Ana residents for specific devices and products including:

- | High-efficiency clothes washers.
- | Weather-based irrigation controllers or “smart” controllers. These controllers automatically adjust for changing weather conditions, thereby reducing waste and runoff.
- | Rotating sprinkler nozzles. These nozzles apply water more slowly and uniformly to prevent over-watering and encourage healthy plant growth. They also use 20% less water than conventional spray heads.

For more information and other possible rebates, call 888-376-3314 or visit www.socalwatersmart.com or www.bewaterwise.com.

Indoor Tips

- 1 Brush Efficiently.**
Turn off the water when you're brushing your teeth and save 3 gallons of water a day.
- 2 Get Clean Quickly.**
Spend only 5 minutes in the shower and save up to 25 gallons each time.
- 3 Fix The Drips.**
Repair your leaks immediately. This could save you hundreds of gallons of wasted water a month.
- 4 Take On Full Loads.**
Wash only full loads of laundry and dishes and save 15-50 gallons for each load.
- 5 Buy Efficient.**
Buy water-saving devices like high-efficiency toilets and clothes washers, and save many gallons per day. Some of these clothes washers are eligible for rebates!

Outdoor Tips

- 6 Don't Over-Water.**
Water outdoors 2 days a week instead of 5 and save about 840 gallons a week.
- 7 Choose the Right Time.**
Water in the early morning or evening to reduce evaporation and save 25 gallons a day.
- 8 Control What You Need.**
Install a smart sprinkler controller that is weather based and save 40 gallons a day.
- 9 Choose the Right Tools.**
Put down the hose and pick up a broom when you want to clean your driveway sidewalks, and save 150 gallons each time.
- 10 Maintain Your System.**
Check your sprinkler system for leaks, over-spray and broken sprinkler heads and save up to 500 gallons a month.



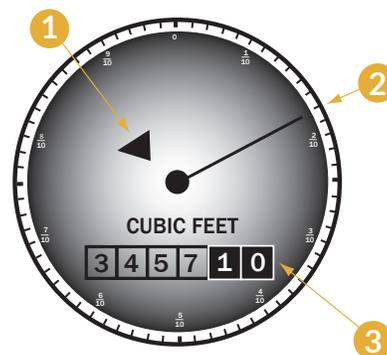
READING YOUR WATER METER & CHECKING FOR WATER LEAKS

It's helpful to know how to read your water meter, not only to verify the monthly reading on your water bill but also to detect water leaks.

Reading Your Water Meter.

Water meters are usually located between the sidewalk and curb under a cement cover. Remove the cover by inserting a screwdriver in the hole of the lid and then carefully lift the cover. The meter reads straight across, like the odometer on your car. Read only the white numbers. You can refer to the adjacent diagram for details about reading the water meter register.

- 1 Low-Flow Indicator** – The low-flow indicator will spin if any water is flowing through the meter.
- 2 Sweep Hand** – Each full revolution of the sweep hand indicates that one cubic foot of water (7.48 gallons) has passed through the meter. The markings at the outer edge of the dial indicate tenths and hundredths of one cubic foot.
- 3 Meter Register** – The meter register is a lot like the mileage odometer on your car. The numbers keep a running total of all the water that has passed through the meter. The register shown here indicates that 345,710 cubic feet of water has passed through this meter.



How can you tell if you have a leak inside your house?

Your water meter can help you determine whether your water-using fixtures or inside plumbing have inconspicuous leaks. It's the best place to begin your search.

- Turn off all faucets and water-consuming appliances, including evaporative coolers and icemakers in refrigerators.
- Check the meter register for any movement of the numbers or the Low-Flow Indicator and note the time.
- Check the meter register again after 15-30 minutes. Any movement indicates a leak.

How can you tell if you have a leak outside your house?

Turn off your house valve (all indoor and outdoor water). Check the meter register for any movement as described above. Any movement indicates a leak between the water meter and your home. If you suspect you have a leak, be sure to contact a plumber. And if you don't, remember to check for leaks periodically.



FAT, OILS AND GREASE

Keep Your Drains Open and Our Oceans Free of Pollution.

Keeping our sewer system free from fats, oils and grease (FOG) is an important way to prevent added pollution in our waterways and oceans. How? As FOG accumulates and creates blockages in your home's wastewater system, sewage can overflow through a manhole, cleanout and/or broken pipe and into our storm water drain system and waterways. Where do waterways drain? Directly into the ocean.

Not only can sewage spills cause health hazards and damage to your home, they threaten the environment, local waterways, and beaches. There's a lot you can do to keep your wastewater systems clear and our ocean free of pollution. Here are a few tips:

- | Never pour grease, cooking oil, or fat down the sink. They can clog drains and cause sewer pipes to back up.
- | Cool down your cooking oil, grease, or fat and pour them into a container with a secure lid.
- | Wipe out pots and pans with a paper towel before washing them; you will use less soap and decrease clogs.
- | Dispose of food scraps in the trash, not down garbage disposals and drains.

Avoid disposing these items in the sewer system:

Acne Pads	Diapers	Paper Towels
Band Aids	Dirt, Sand, Rocks	Plastic
Condoms	Drinking Straws	Q-Tips
Cooking Grease and Oil	Feminine Hygiene Products	Rags
Cotton Balls	Food Debris	Sanitary Wipes
Dental Floss	Kitty Litter	Tooth Picks

What should I do in the event of a sewer spill?

If you witness a sewer spill or see evidence that a spill has occurred, please contact the Public Works Agency at 714-647-3380.



TURN ON THE TAP, SAVE BIG MONEY ... AND THE ENVIRONMENT

You may have heard Santa Ana serves up one of the best tasting tap water in the world (see the article in this report about our awards), but did you know our water is one of the most affordable? At an average monthly cost of \$58.36, it rates as one of the lowest costing tap water in Orange County (#6 out of 30 agencies according to a survey conducted by the Municipal Water District of Orange County.)¹

So how does the cost of Santa Ana's tap water compare to bottled water?

If you were to drink eight glasses of water a day from a Santa Ana tap, it would cost you only 66 cents a year. However, you could spend an average 2,200 times as much, roughly \$1,475 a year, by drinking that same amount in bottled water. Besides cost there are other important reasons not to drink bottled water, like its safety and environmental impact.

$$\text{8 glasses} \times 365 = 66 \text{¢}$$

Reasons not to drink bottled water

- Bottled water is expensive.** Americans spent \$11.8 billion on bottled water in 2012² and paid up to 1,000 times the cost of tap water.
- No healthier than tap.** Tap water in the United States is subject to more stringent federal safety regulations than bottled water. Federal, state, and local environmental agencies require all municipal and private water agencies to rigorously test for bacteria and toxic chemicals, as well as provide consumers with a water quality report each year. According to *Food & Water Watch*, a 2010 survey revealed only 3 bottled water companies provide the public with the same level of information available for tap water. Independent testing of 10 different brands of bottled water conducted in 2008 found 38 contaminants.³
- Bottled water = garbage.** Bottled water produces up to 1.5 million tons of plastic waste per year. According to *Food and Water Watch*, that plastic requires up to 47 million gallons of oil per year to produce.

So as you get yourself a glass of water, think about where it comes from and at what cost to the environment. Our tap water is not only very affordable, it's safe and we have the data to prove it!

¹ Based on consumption of 25 billing units per month.

² Source: International Bottled Water Association

³ Source: Environmental Working Group. Conducted by the Environmental Working Group in 2008. 10 popular brands of bottled water, purchased from grocery stores and other retailers in 9 states and the District of Columbia, contained 38 chemical pollutants, with an average of 8 contaminants in each brand.



IMPORTANT TELEPHONE NUMBERS

Building Inspection Request Line

714-667-2738

City Manager

714-647-5200

Fire Department

714-573-6000

(call 911 for emergencies)

Mayor and City Council

714-647-6900

Parks & Recreation

714-571-4200

Planning & Building, Planning Division

(Environmental Review, Historic Preservation & New Development)

714-667-2700

Police Department

714-245-8665

(call 911 for emergencies)

Public Library

714-647-5250

Public Works Emergency Repairs

(after hours)

714-834-4211

Public Works Information

714-647-5690

Maintenance Service

Curb & Sidewalks

714-647-3380

Graffiti Removal

877-786-7824

Graffiti Task Force

714-245-8769

(Police Department)

Public Works General

Maintenance and Repairs

714-647-3380

Sanitation

714-647-3309

Shopping Cart Removal

714-667-2780

Street Lights

714-647-3505

Street Sweeping

714-647-3309

Trees

714-647-3330

Weed Abatement

714-647-3309

Water Resources

Sewer/Storm Drain Maintenance

714-647-3380

Water Administration

714-647-3320

Water & Sewer Permits

714-647-5026

Water Customer Service and Billing

714-647-5454

Water Engineering

714-647-3320

Water Maintenance & Construction

714-647-3346

Water Production

714-647-3382

Water Quality & Conservation

714-647-3341

Water Service & Main Location

714-647-3320

Refuse Collection

New Trash Cart/Order Dumpster

714-558-7761

Recycle Used Car Oil & Filter

714-558-7761

Traffic and Transportation

Signal Repairs

8 a.m.-5 p.m. (Weekdays)

714-647-5620

Signal Repairs - Police Department

(Evenings/Weekends)

714-834-4211

Street Work Permits

714-647-5039

Traffic Operations

714-647-5619

Other Helpful Numbers

Bus Information

714-636-7433

Noise Complaints

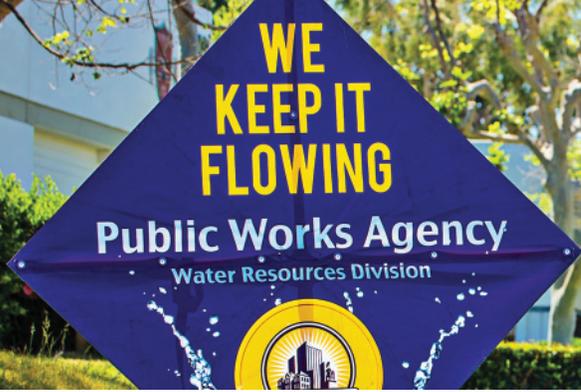
714-834-4211

Overcrowding

714-667-2780

Poison Center

800-876-4766



ABOUT THIS REPORT

The focal point of the water quality report is a table that lists the results of year-round monitoring for more than 120 constituents. Only the constituents that are found are listed in the table. Bottled water is not covered in this report. Santa Ana met all primary drinking water standards in 2012.

By reading the table from left to right, you will learn the quantity of a constituent found in Santa Ana's water supply and how that compares with the allowable state and federal limits.

You'll also learn the range and average of the constituent measured as well as its origin. The questions and answers on this page, numbers 1 through 7, will explain the important elements of the table.

WATER SOURCE & COMPONENTS

1. What are the sources of the water Santa Ana delivers?

The City of Santa Ana depends on two sources for the 12.5 billion gallons of water we supply each year —68% is groundwater and 32% is imported water, purchased from the Metropolitan Water District of Southern California (MWD).

The groundwater accumulates and is stored beneath the surface of the earth and then pumped to the surface by 20 city-owned wells. MWD brings Colorado River water from Lake Havasu and runoff from the snow pack in the Sierra Nevada Range in Northern California. The water is then treated at either the Diemer Filtration Plant in Yorba Linda or the Weymouth Filtration Plant in LaVerne before it is delivered to Santa Ana.

There are seven MWD connections located in the City. Most of our customers receive a blending of the two sources, groundwater and imported water. For more details, see the Water Quality Standards for each of these sources in the data that follows. We have listed groundwater and imported water in separate columns.

2. What's in my drinking water?

Your tap water may contain different types of chemicals (organic and inorganic), microscopic organisms (e.g., bacteria, algae, viruses) and radioactive materials (radionuclides), many of which are naturally occurring. Health agencies require monitoring for these constituents, because at certain levels they could make a person sick. The column marked "Parameter" lists the constituents found in the water used by Santa Ana.

3. What are the maximum allowed levels for constituents in drinking water?

Health agencies have maximum contaminant levels for constituents so that drinking water is safe and looks, tastes and smells good. A few constituents have the letters "TT" in the MCL column because they do not have a numerical MCL. Instead, they have certain treatment requirements that have to be met. One of the constituents, total chlorine residual, has an MRDL (maximum residual disinfection level) instead of an MCL.

The MRDL is the maximum level of a disinfectant added for water treatment that is allowed in water. While disinfectants are necessary to kill harmful microbes, drinking water regulations protect against too much disinfectant being added. Another constituent, turbidity, has a requirement that 95 percent of the measurements taken must be below a certain number. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the efficiency of the filtration system.



WATER SOURCE & COMPONENTS *CONT.*

4. Why are some of the constituents listed in the section labeled “Primary Standards” and others in the “Secondary Standards”?

Constituents that are grouped in the primary standards section may be unhealthy at certain levels. Constituents that are grouped under the secondary standards section can affect the appearance, taste and smell of water, but do not affect the safety of the water unless they also have a primary standard. Some constituents (e.g., aluminum) have two different MCLs, one for health-related impacts, and another for non-health-related impacts.

5. How do I know how much of a constituent is in my water and if it is at a safe level?

With a few exceptions, if the AVERAGE amount of a constituent found in tap water over the course of a year is no greater than the MCL, then the regulatory requirements are considered to be satisfied. The highest and lowest levels measured over a year are shown in the RANGE. Requirements for safety, appearance, taste and smell are based on the AVERAGE levels recorded and not the RANGE.

6. How do constituents get into our water?

Drinking water (both tap water and bottled water) comes from 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 from human activity. The most likely source for each constituent is listed in the last column of the table.

7. Are there any potential sources of contamination in our system?

An assessment of the drinking water wells for the City of Santa Ana was completed in December 2012. The City wells are considered most vulnerable to the following activities associated with contaminants detected in the water supply: historic agricultural activities, golf courses, and application of fertilizers.

The City’s wells are considered most vulnerable to the following activities not associated with detected contaminants: chemical/petroleum pipelines, chemical/petroleum processing/stores, dry cleaners, gas stations, junk/scrap/salvage yards, metal plating/finishing/fabrication, plastics/synthetics producers, and sewer collection systems.

GET INVOLVED.

If you would like to be involved in issues and decisions that affect the quality and cost of your drinking water, City Council meetings are open to the public and held at 5:45 p.m. on the first and third Monday of each month or on the following Tuesday if Monday is a holiday. The meeting location is at City Council Chambers, 22 Civic Center Plaza, Santa Ana, CA 92701.

For more information, contact:

Santa Ana City Council
 20 Civic Center Plaza
 P.O. Box 1988, M31
 Santa Ana, CA 92701
 phone: 714-647-6900
 fax: 714-647-6954



YOUR WATER, YOUR HEALTH

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 the water poses a health risk. You can learn more about contaminants and potential health effects by calling the U.S. Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline at 800-426-4791 or visiting their website at epa.gov/safewater/.

To ensure that tap water is safe to drink, the USEPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water. Both sets of requirements protect public health. 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/CDC (U.S. Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 800-426-4791. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. To date, Cryptosporidium has not been detected in our water supply.

Beginning in October 2007, water that is received by the City of Santa Ana from MWD will have fluoride added to it. Our well water currently has a naturally occurring fluoride range level of 0.18 to 0.56 ppm. Water provided by MWD will have a fluoride level of 0.7 to 0.8 ppm. This plan was approved by the CDC and the California Department of Public Health. Additional information may be found by calling MWD's Water Quality Information Hotline at: 800-354-4420. You can also download a fact sheet at mwdh2o.com/fluoridation/fluoridationfactsheet.pdf or visit ada.org/fluoride.aspx.

QUESTIONS ABOUT YOUR WATER QUALITY REPORT?

A copy of the complete assessment is available at the Water Resources Division office. You can request a summary of the assessment be sent to you by contacting us at 714-647-3320. If you have questions about your water quality, contact:

City of Santa Ana, Water Resources Division

Nabil Saba, P.E., Interim Water Resources Manager
Cesar Barrera, P.E., Principal Civil Engineer
Thomas Dix, Water Quality Coordinator

220 S. Daisy Avenue, Bldg. A
Santa Ana, California 92703
phone: 714-647-3320
fax: 714-647-3345
www.santa-ana.org



TERMS AND ABBREVIATIONS

The following glossary of definitions will help you understand the terms and abbreviations used in this report.

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 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 USEPA.

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 Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.

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

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

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. The adjacent table lists data on the levels of regulated contaminants that were detected in our water supply from January 1 through December 31, 2012. The presence of these contaminants in the drinking water does not necessarily indicate that the water poses a health risk.

THE FOUR TERMS TO EXAMINE

Primary Standards



Mandatory Health-Related Standards that may cause health problems in drinking water.

Secondary Standards



Aesthetic Standards (non health-related) that could cause odor, taste, or appearance problems in drinking water.

Unregulated Parameters



Information about contaminants that are monitored but are not currently regulated by federal and state health agencies.

Additional Parameters



Information that may also be of interest to our customers.

WATER QUALITY DATA



ADDITIONAL ABBREVIATIONS USED IN THIS CHART

MFL: million fibers per liter	NS: no standard	ppm: parts per million, or milligrams per liter (mg/L)
NA: not applicable	NTU: nephelometric turbidity units – a measure of suspended material in water	ppt: parts per trillion, or nanograms per liter (ng/L)
ND: not detectable at testing limit	pCi/L: picocuries per liter (a measure of radioactivity)	ppq: parts per quadrillion, or picograms per liter
NR: not required	ppb: parts per billion, or micrograms per liter (ug/L)	uS/cm: microsiemens per centimeter
NC: not collected	NL: notification level	AI: aggressiveness index
AL: action level	CFU: Colony-Forming Units	PHG: Public Health Goal



Primary Standards - Mandatory Health - Related Standards

CLARITY Parameter	MCL	PHG (MCLG)	Imported Water		Groundwater		Typical Source Of Contaminant
			Range	Average	Range	Average	
Combined Filter Effluent Turbidity (NTU)	0.3	NA	Highest	0.04	NR	NR	Soil runoff
Combined Filter Effluent Turbidity (%)	95(a) ¹	NA	%<0.3	100	NR	NR	Soil runoff

Turbidity: Is a measure of the cloudiness of the water. It is monitored in our imported water source because it is a good indicator of the effectiveness of the filtration system.

MICROBIOLOGICAL Parameter	MCL	PHG (MCLG)	Imported Water		Groundwater		Typical Source of Contaminant
			Range	Average	Range	Average	
Total Coliform Bacteria (b) ²	NA	NA	ND - 0.5	0.1	ND	ND	Naturally present in the environment
RADIOLOGICALS							
Natural Uranium (pCi/L)	20	0.43	1 - 2	2	ND - 10.20	3.73	Erosion of natural deposits

INORGANIC CHEMICALS							
Arsenic (ppb)	10	0.004	ND	ND	ND - 3.20	0.28	Erosion of natural deposits; runoff from orchards, glass and electronics production wastes
Barium (ppb)	1000	2000	ND	ND	ND - 169.00	19.45	Oil and metal refineries discharges; natural deposits erosion
Fluoride (ppm) (naturally occurring)	2	1	ND - 0.3	0.3	0.16 - 0.53	0.34	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Fluoride (ppm) (Treatment - related)	(c) ³	0.8	0.6 - 1.1	0.8	NA	NA	Water additive for dental health
Nitrate (as NO ₃ ppm)	45	45	ND	ND	ND - 40.40	10.98	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate and Nitrite (as N ppm) ⁴	10	10	ND	ND	0.40 - 9.13	2.5	
Perchlorate (ppb) ⁵	6	6	ND	ND	ND - 4.20	0.07	It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts
Selenium (ppb)	50	(50)	ND	ND	NR	NR	Refineries, mines, and chemical waste discharges; runoff

Primary Standards - Mandatory Health-Related Standards *CONT*

Parameter	MCL	PHG (MCLG)	Imported water		Groundwater			Typical Source of Contaminant
			Range	Average	90th Percentile	# of Sites Above the AI	# of Sites Sampled	
Copper (ppm)	AL=1.3	0.3	ND	ND	0.14	0	84	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) ⁶	AL= 15	0.2	ND	ND	ND	0	84	Internal corrosion of household plumbing systems; erosion of natural deposits; discharges from industrial manufacturers

Parameter	MCL (MRDL)	PHG MCLG (MRDLG)	Imported water		Groundwater or System		Typical Source of Contaminant
			Range	Average	Range	Average	
Volatile Organic Compounds							
Methyl-tert-butyl-ether (MTBE) (ppb)	5	13	ND	ND	ND	ND	Leaking underground gasoline storage tanks and pipelines; discharge from petroleum and chemical factories
Disinfection By-Products, Disinfectant Residuals⁷ – Values are for the distribution system based on annual running average							
Total Trihalomethanes (TTHM) (ppb) ⁸	80	NA	42 - 50	45	ND - 59.6(d)	28.5	By-product of drinking water disinfection
Haloacetic Acids (Five) (ppb)	60	NA	11 - 19	15	ND - 45.3(d)	16.4	By-product of drinking water disinfection
Total Chlorine Residual (ppm)	(4.0)	(4.0)	1.5 - 2.8	2.3	0.42 - 1.1	0.9	Drinking water disinfectant added for treatment

Secondary Standards - Aesthetic Standards (Non-Health Related)

Parameter	MCLG	PHG (MCLG)	Imported Water		Groundwater		Typical Source of Contaminant
			Range	Average	Range	Average	
Chloride (ppm)	500	NA	85 - 95	90	18.20-139.00	56.18	Runoff/leaching from natural deposits; seawater influence
Color (units)	15	NA	1	1	ND - 3.00	0.45	Naturally-occurring organic materials
Corrosivity (SI)	NA	NA	0.24 - 0.38 Non-corrosive	0.28 Non-corrosive	Non-corrosive	Non-corrosive	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Iron (ppb)	300	NA	ND	ND	ND	ND	Municipal and industrial waste discharges
Foaming Agents (ppb)	500	NA	ND	ND	ND	ND	Municipal and industrial waste discharges
Odor, Threshold (units)	3	NA	2	2	ND - 2.00	0.12	Natural occurring organic materials
Spec. Conductance (um/cm)	1600	NA	340 - 930	760	415.00 - 1,150.00	705.3	Substances that form ions when in water, seawater influence
Sulfate (ppm)	500	NA	130 - 160	150	44.20 - 145.00	94.75	Runoff/leaching from natural deposits, seawater influence
Total Dissolved Solids (ppm)	100	NA	450 - 500	485	250.00 - 692.00	431	Runoff/leaching from natural deposits
Turbidity (NTU)	5	NA	ND	ND	ND - 1.70	0.22	Soil runoff

Additional Parameters That May Be Of Interest To Our Customers

Parameter	MCL	PHG (MCLG)	Imported Water		Ground Water		Typical Source of Contaminant
			Range	Average	Range	Average	
1,4-Dioxane (ppb)	NA	NA	NC	NC	ND	ND	Runoff/leaching from natural deposits; seawater influence

Unregulated Parameters That May Be Of Interest To Our Customers

Parameter	MCL	PHG (MCLG)	Imported Water		Ground Water	
			Range	Average	Range	Average
Total Alkalinity (as CaCO ₃) (ppm)	NA	NA	53 - 120	96	146.00 - 237.00	167.55
Bicarbonate (as HCO ₃)	NA	NA	NC	NC	178.00 - 289.00	204.1
Boron (ppb)	NA	NL = 1000	130	130	ND - 0.29	0.06
Bromide (ppm)	NS	NS	NC	NC	ND - 0.17	0.04
Calcium (ppm)	NA	NA	45 - 53	48	35.70 - 145.00	77.2
Bicarbonate (as CaCO ₃)	NA	NA	NC	NC	146.00 - 237.00	167.55
Hexavalent Chromium (ppb)	NA	0.02	ND	ND	ND - 2.20	0.87
Total Hardness (as CaCO ₃) (ppm)	NA	NA	80 - 270	205	121.00 - 469.00	255.3
Total Hardness (Grains per gallon)	NS	NS	4.7 - 15.7	12	7.06 - 27.37	14.9
Magnesium (ppm)	NA	NA	19 - 21	20	7.80 - 28.70	15.21
N-Nitrosodimethylamine (NDMA) (ppt)	NA	NL = 10	ND - 2.5	ND - 6.7	ND	ND
pH (pH units)	NA	NA	7.9 - 8.6	8.1	7.70 - 8.10	7.92
Potassium (ppm)	NA	NA	3.7 - 4.1	3.9	1.30 - 3.50	2.08
Radon (pCi/L) ⁹	NA	NA	ND	ND	256.00 - 529.00	368.71
Sodium (ppm)	NA	NA	74 - 82	79	34.10 - 66.60	45.64
TOC (ppm)	TT	NA	1.8 - 2.7	2.3	ND - 0.36	0.13
Vanadium (ppb)	NA	NL = 50	ND	ND	ND - 3.70	0.78

¹(a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.

²(b) The State required raw water coliform monitoring for all treatment plants beginning March 2008. Reporting level is 1 CFU/100mL for total coliform and E. coli.

³(c) Data for the naturally-occurring fluoride were taken before the fluoridation treatment began. Fluoridation treatment of water supplies at all five MWD treatment plants started sequentially from October 29, 2007 to December 3, 2007. Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.

⁴**SPECIAL EDUCATIONAL STATEMENT REGARDING NITRATE:** Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. 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, you should ask advice from your health care provider.

⁵**SPECIAL EDUCATIONAL STATEMENT REGARDING PERCHLORATE:** Perchlorate has been shown to interfere with uptake of iodide by the thyroid gland, and to thereby reduce the production of thyroid hormones, leading to adverse effects associated with inadequate hormone levels. Thyroid hormones are needed for normal prenatal growth and development of the fetus, as well as for normal growth and development in the infant and child. In adults, thyroid hormones are needed for normal metabolism and mental function.

⁶**Lead in Tap Water:** 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 of Santa Ana is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

⁷**Disinfection and Disinfection Byproducts:** Drinking water disinfection was one of the major public health advances in the 20th century. It was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today. Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases. Chlorine is added to your drinking water at the source of supply (groundwater well or surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This "residual" chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home. However, chlorine can react with naturally occurring materials in the water from unintended chemical byproducts, called disinfection byproducts (DBPs), which may pose health risks. A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts. The Safe Drinking Water Act requires the U. S. Environmental Protection Agency (USEPA) to develop rules to achieve these goals. Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are most common and most studied DBPs found in drinking water treated with chlorine. In 1979, the USEPA set maximum amount of total THMs allowed in drinking water at 100 parts per billion as an annual running average. Effective in January 2002, the **Stage 1** Disinfectants/Disinfection Byproducts Rule lowered the total THM maximum annual average to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water. **Stage 2** of the regulation was finalized by USEPA in 2006, which further controls allowable levels of DBPs in drinking water without compromising disinfection itself. A required distribution system evaluation was completed in 2008 and a Stage 2 monitoring plan has been approved by CDPH. Full Stage 2 compliance began in 2012. Your drinking water complies with the Stage 1 and Stage 2 Disinfectants/Disinfection Byproducts Rule.

⁸Eight Locations in the distribution system are tested quarterly for total trihalomethane and haloacetic acids.

⁹**Radon:** Radon is a radioactive gas that you can't see, taste, or smell. It is found throughout the U.S. Radon can move through the ground and into a home through cracks and holes in the foundation. Radon can build up in high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your State radon program (1-800-745-7236), the EPA Safe Drinking Water Act Hotline (1-800-426-4791), or the National Safety Council Radon Hotline (1-800-SOS-RADON.)