



# WATER QUALITY

## CONSUMER CONFIDENCE REPORT

# 2009

## About Your Drinking Water

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

The City of Santa Ana depends on two sources for the 16.3 billion gallons of water we supply each year—69% is groundwater and 31% 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. Groundwater and imported water are listed in separate columns.

## Reader's Guide

The focal point of the water quality report is a table that lists the actual 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.

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 found on the charts.

### 1. 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 from treatment plants used by Santa Ana's treatment plants.

### 1. 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 our filtration system.

### 1. 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.

### 1. 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 very 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.

### 1. 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.

### 1. 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 2006. 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.

A copy of the complete assessment is available at the Water Resources Agency office. You may 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:

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## Your Water, Your Safety

*(Read this important health information about drinking water contaminants.)*

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: <http://www.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 at MWD's Water Quality Information Hotline at 800-354-4420, or these websites: <http://www.mwdh2o.com/fluoridation>, [www.ada.org](http://www.ada.org).

#### Contaminants that may be present in water before some treatment include:

- **Pesticides and herbicides** that may come from a variety of sources such as agriculture, urban storm-water runoff, and residential uses.
- **Microbial contaminants** such as viruses, bacteria and protozoa that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Radioactive contaminants** which can be naturally occurring or be the result of oil and gas production, and mining activities
- **Organic chemical contaminants** including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, motorized watercraft, urban storm-water runoff and septic systems.
- **Inorganic contaminants** such as salts and metals, that can be naturally occurring or come from urban storm-water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

## 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, 2007. The presence of these contaminants in the drinking water does not necessarily indicate that the water poses a health risk.

## ADDITIONAL ABBREVIATIONS:

**MFL:** million fibers per liter

**NA:** not applicable

**NC:** not collected

**ND:** not detectable at testing limit

**NR:** not required

**NS:** no standard

**NTU:** nephelo-metric turbidity units—a measure of suspended material in water

**pCi/L:** picocuries per liter (a measure of radioactivity)

**ppb:** parts per billion, or micrograms per liter (ug/L)

**ppm:** parts per million, or milligrams per liter (mg/L)

**ppq:** parts per quadrillion, or picograms per liter

**ppt:** parts per trillion, or nanograms per liter (ng/L)

**uS/cm:** microsiemens per centimeter

## THERE ARE 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.

## Primary Standards – Mandatory Health-Related Standards

CLARITY							
Parameter	MCL	PHG (MCLG)	Imported Water		Ground Water		Typical Source of Contaminant
			Range	Average	Range	Average	
Combined Filter Effluent Turbidity (NTU)	0.3	NA	Highest	0.06	NR	NR	Soil runoff
Combined Filter Effluent Turbidity (B)	95(a)	NA	3<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							
Total Coliform Bacteria (b)	NA	NA	ND-0.2	0	ND	ND	Naturally present in the environment
RADIOLOGICALS							
Gross Alpha activity (pCi/L)	15	0	ND-9.3	3.4	ND-9.49	3.02	Erosion of natural deposits
Natural Uranium (pCi/L)	20	0.43	2.4-3.7	3.1	ND-8.79	3.68	
INORGANIC CHEMICALS							
Arsenic (ppb)	10	0.004	ND-2.4	2.2-2.3 Highest RAA	ND-2.9	0.38	Erosion of natural deposits; runoff from orchards, plants and electronics production wastes
Barium (ppb)	1000	2000	110-140	125	ND-153	19.4	Oil and metal refineries discharges; natural deposits erosion
Fluoride (ppm) (naturally occurring)	2	1	0.2-0.4	0.3	0.17-0.48	0.33	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Fluoride (ppm) (Treatment-related)	(c)	1	0.7-1.3	0.8	NA	NA	Water additive for dental health
Nitrate (as NO <sub>3</sub> ppm)	45	45	NC	NC	ND-38.00	10.59	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate and Nitrite (as N ppm)	10	10	NC	NC	ND-8.59	2.39	
Selenium (ppb)	50	(50)	ND	ND	NR	NR	Refineries, mines, and chemical waste discharges; runoff
<b>SPECIAL EDUCATIONAL STATEMENT REGARDING NITRATE:</b> 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.							
(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.							
(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.							
(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.							

Parameter	MCL	PHG (MCLG)	Imported Water		Ground Water		Typical Source of Contaminant	
			Range	Average	90th Percentile	# of Sites Above the AL		# of Sites Sampled
Copper (ppm)	AL=1.3	0.3	ND	ND	0.19	0	119	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	AL=0.015	0.2	ND	ND	ND	0	119	Internal corrosion of household plumbing systems; erosion of natural deposits; discharges from industrial manufacturers
Parameter		MCL	PHG (MCLG)	Imported Water		Ground Water		Typical Source of Contaminant
Volatile Organic Compounds				Range	Average	Range	Average	
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 Residuals—Values are for the distribution system based on annual running average								
Total Trihalomethanes (TTHM) (ppb)	80	NA	(c)		ND-76.7 (d)		13.1	By-product of drinking water disinfection
Halooxalic Acids (HAA5) (ppb)	60	NA	(c)		ND-32.5 (d)		3.9	
Total Chlorine Residual (ppm)	[4]	[4]	0.72-3.4	2.4	0.45-0.97		0.65	Drinking water disinfectant added for treatment
(c) The Stage 2 Disinfectants/Disinfection By-Products (D/DBP) Rule's IDES was conducted between April 2007 and March 2008 for total trihalomethanes (TTHMs) and haloacetic acids (HAA5) in conjunction with Stage 1 D/DBP Rule's compliance monitoring. All TTHM and HAA5 values from the 19 IDES specific samples were within the range of values reported for Metropolitan's distribution system. Information on these samples is available upon request from the Metropolitan Water District of Southern California.								
(d) The Stage 2 Disinfectants/Disinfection By-Products (D/DBP) Rule's IDES was conducted between November 2007 and August 2008 for total trihalomethanes (TTHMs) and haloacetic acids (HAA5) in conjunction with Stage 1 D/DBP Rule's compliance monitoring. All TTHM and HAA5 values from the 12 IDES specific samples were within the range of values reported for the City of Santa Ana's distribution system.								

## Secondary Standards – Aesthetic Standards (non-health related)

Parameter	MCL	PHG (MCLG)	Imported Water		Groundwater		Typical Source of Contaminant
			Range	Average	Range	Average	
Chloride (ppm)	500	NA	NC	NC	18.20-108.00	49.16	Runoff/leaching from natural deposits; seawater influence
Color (units)	15	NA	NC	NC	ND-12.00	0.35	Naturally-occurring organic materials
Corrosivity (SI)	NA	NA	0.22-0.41 Non-corrosive	0.33 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-348.00	5.8	Municipal and industrial waste discharges
Foaming Agents (ppb)	500	NA	NC	NC	ND-0.03	ND	Municipal and industrial waste discharges
Odor, Threshold (units)	2	NA	2	2	ND	ND	Naturally occurring organic materials
Spec. Conductance (uS/cm)	1600	NA	NC	NC	452.00-1050.00	665.43	Substances that form ions when in water; seawater influence
Sulfate (ppm)	500	NA	NC	NC	47.40-137.00	88.4	Runoff/leaching from natural deposits; seawater influence
Total Dissolved Solids (ppm)	1000	NA	NC	NC	258.00-452.00	400.85	Runoff/leaching from natural deposits
Turbidity (NTU)	5	NA	0.31-3.2	0.89	ND-330	0.28	Soil runoff

## Unregulated Parameters That May Be Of Interest To Our Customers

Parameter	MCL	PHG (MCLG)	Imported Water		Ground Water	
			Range	Average	Range	Average
Alkalinity (ppm)	NA	NA	106-135	116	140.00-237.00	167.53
Bicarbonate (as HCO <sub>3</sub> )	NA	NA	NC	NC	171.00-289.00	204.15
Boron (ppb)	NA	NL=1000	120-140	130	ND-0.19	0.02
Bromine (ppm)	NS	NS	NC	NC	ND-0.21	0.09
Calcium (ppm)	NA	NA	NC	NC	34.90-135.00	73.16
Carbonate (as CaCO <sub>3</sub> )	NA	NA	NC	NC	ND-1.40	0.12
Carbonate (as CO <sub>3</sub> )	NA	NA	NC	NC	ND-1.40	0.07
Chromium VI (ppb)	NA	NA	0.07-0.27	0.19	ND-3.40	1.08
Total Hardness (ppm)	NA	NA	NC	NC	115.00-436.00	241.88
Total Hardness (Grains per gallon)	NS	NS	NC	NC	6.7-25.5	14.1
Magnesium (ppm)	NA	NA	NC	NC	6.90-26.90	14.4
N-Nitrosodimethylamine (NDMA) (ppb)	NA	AL=3	ND	ND	ND	ND
pH (pH units)	NA	NA	8.0-8.4	8.3	7.50-8.30	8.03
Potassium (ppm)	NA	NA	NC	NC	1.10-3.70	1.98
Radon (pCi/L)	NA	NA	NC	NC	256.00-529.00	368.71
Sodium (ppm)	NA	NA	NC	NC	3.10-43.70	45.88
TOC (ppm)	TT	NA	2.2-3.1	2.7	ND-0.51	0.11
Vanadium (ppb)	NA	AL=50	3.5-4.0	3.7	ND-6.20	1.04

**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 Safe Council Radon Hotline (1-800-SOS-RADON).

## Additional Parameters That May Be Of Interest To Our Customers

Parameter	MCL	PHG (MCLG)	Imported Water		Ground Water		Typical Source of Contaminant
			Average	Range	Average	Range	
1,4-Dioxane (ppb)	NA	NA	NA	NC	NC	ND	ND
1,1-Dichloroethylene	6	6	10	ND	ND	ND-0.60	0.01

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Daimntawv tshaj tawm no muaj lus tseemceeb txog koj cov dej haus. Tshab txhais nws, los yog tham nrog tej tug neeg uas totaub txog nws.

Chi tiết này thật quan trọng. Xin nhờ người dịch cho quý vị.

此份有关你的食水报告,内有重要资料和信息,请找他人为你翻译及解释清楚。