

Los Angeles



Department of Water & Power



**2008**  
Annual **Water**  
**Quality**  
Report

Your Water Quality Questions Answered

# 2008 Annual Water Quality Report

**“In 2008, all 200 billion gallons of water supplied to the 4 million residents of Los Angeles met or surpassed all health-based drinking water standards.”**



## Overview

### LADWP Water Meets or Surpasses All Water Quality Standards

This past year, LADWP consistently provided the City of Los Angeles with high quality drinking water. In 2008, all 200 billion gallons of water supplied to the 4 million residents of Los Angeles met or surpassed all health-based drinking water standards. These standards are set by the U.S. Environmental Protection Agency (EPA) and the State of California’s Department of Public Health (CDPH).

LADWP achieves this high quality water by protecting our water sources, using state-of-the-art water treatment processes, prudently maintaining and operating our facilities, and vigilantly monitoring and testing the water we serve. In 2008, LADWP conducted nearly 250,000 field and laboratory tests on more than 25,000 samples collected throughout the year for hundreds of different chemicals such as arsenic, chromium, lead, and disinfection by-products to ensure that they are well within safe levels before we serve the water to our customers.

This report summarizes the results of those water quality tests and provides specific information about the quality of the water served in your neighborhoods. Its purpose is to help you understand the amounts and types of testing LADWP does to ensure the high quality of water we provide every customer.

Beyond providing you with information that is required by law, this report also answers some of your most common water quality questions regarding appearance, taste and smell; the use of home filtration systems; and the use of bottled versus tap water.

I urge you to spend a few minutes to read this report. Rest assured that LADWP is working 24 hours a day, 365 days a year to ensure that your drinking water is of the highest quality available.

H. David Nahai, Chief Executive Officer and General Manager, LADWP

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# Drinking Water and Your Health

## Notice from the EPA

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. Why? Because the sources of drinking water (both tap and bottled water) 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 materials, and can pick up substances resulting from the presence of animal or human activity.

**However, the presence of contaminants does not necessarily indicate that the water poses a health risk.**

In order to ensure that tap water is safe to drink, the EPA and the California Department of Public Health enforce regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for the same contaminants in bottled water to ensure protection for the public.

**Contaminants that may be present in source waters include:**

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

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

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

**Organic chemical contaminants**, including synthetic and volatile chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application, and septic systems.

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

Learn more about contaminants and potential health effects by calling EPA’s Safe Drinking Water Hotline at (800) 426-4791 or visiting its website at [www.epa.gov](http://www.epa.gov).



## Health-Related Notices

### Precautions for People with Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. People with weakened immune systems may have undergone chemotherapy treatment, received organ transplants, suffer from HIV/AIDS, or other immune system disorders. Some elderly and infants can be particularly at risk from infection. People with these types of health challenges should seek advice about drinking water from their health care providers. Guidelines from the EPA and Centers for Disease Control (CDC) offer ways to lessen the risk of infection by Cryptosporidium and other microbial contaminants. These are available at no cost by contacting the EPA’s Safe Drinking Water Hotline at (800) 426-4791, or visiting its website at [www.epa.gov](http://www.epa.gov).

### Sensitivity to Chlorine and Chloramines

LADWP is gradually switching from chlorine to chloramines to disinfect the water we serve our customers. This will take several years and our customers should expect to receive either type of disinfectant in their water at any time. Both chlorine and chloramines are effective killers of bacteria and other microorganisms, but chloramines form less by-products and do not have a chlorinous odor. Customers in the harbor area of the City have received water treated with chloramines for more than 25 years. More recently, eastern Los Angeles and the Sunland-Tujunga areas now receive water treated with chloramines.

Since chlorine and chloramines are somewhat differently-reacting chemicals, certain types of water users must adjust their additional treatment to be able to handle either disinfectant. Operators of kidney dialysis machines should take extra steps to monitor their equipment more frequently and may need to check with the manufacturer. Customers who maintain fish ponds, tanks or aquaria should also make necessary adjustments in water quality treatment, as both chlorine and chloramines are toxic to fish. For further information, please visit [www.ladwp.com](http://www.ladwp.com), click on “Health and Safety” tab, then click on “Water Quality” or call our water quality hotline @ 1-800-DIAL DWP.





## Bottled water

**Q:** “For years, everybody was drinking bottled water like it was the thing to do. Now there’s this big movement toward drinking tap water again. Why?”

**A:** We all enjoy the convenience of having a bottle of water with us at all times. But you needn’t spend precious dollars to purchase bottled water. LADWP drinking water undergoes rigorous treatment and a multitude of tests to ensure its safety and quality—putting it on par with the best bottled water. People now understand that they can help the environment, save precious time, money and the hassles involved with using bottled water, by simply filling a reusable water bottle with the high quality drinking water that LADWP supplies. So, drink up!



# Water Quality News

## Update on Surface Water Treatment Rule

The Surface Water Treatment Rule (SWTR), administered by CDPH, is a drinking water regulation designed to help safeguard reservoir supplies from microbiological contamination that may occur when rain runoff from nearby hillsides and slopes enters the water. In Los Angeles, SWTR applies to four open water reservoirs – Lower Stone Canyon, Encino, and Upper and Lower Hollywood.

**LADWP has successfully met the compliance deadlines for all four open reservoirs that were subject to SWTR requirements. Construction of support facilities will continue but water from these reservoirs will no longer be served unless it is filtered.**

LADWP has complied with SWTR by removing these reservoirs from regular service. The following is a progress report for each of the reservoirs affected by SWTR.

**Upper and Lower Hollywood Reservoirs** – were replaced by two 30-million-gallon tanks in July 2001.

**Encino Reservoir** – was removed from service on December 27, 2002. The permanent air gap was completed in August 2004. Operation of a new microfiltration plant to treat the reservoir water along with related facilities began in January 2006. This plant currently produces high quality drinking water at a maximum capacity of up to ten million gallons per day.

**Lower Stone Canyon Reservoir** – was removed from service on December 28, 2004. The permanent air gap and associated work for the reservoir was completed on September 12, 2005. The new facilities were successfully commissioned in September 2008. This plant currently produces high quality drinking water at a maximum capacity of up to ten million gallons per day.

## Update on the Enhanced SWTR and a Message on Cryptosporidium

Protection of surface water sources is a very important part of ensuring the safety of drinking water. The Long-Term 2 Enhanced Surface Water Treatment Rule (LT2) is the latest drinking water regulation related to the treatment of surface water. LADWP must cover or remove from service the remaining six uncovered distribution reservoirs, or provide additional treatment to achieve prescribed inactivation or removal of viruses, Cryptosporidium, and Giardia by April 1, 2009 or be in compliance with a state-approved schedule to meet the same requirements. The six reservoirs are Los Angeles, Upper Stone Canyon, Santa Ynez, Ivanhoe, Silver Lake, and Elysian Reservoirs. LADWP notified CDPH on April 1, 2008 that it fully agrees with the new regulations but because it is a very large undertaking for the City, it would need an extended schedule, beyond April 1, 2009 for compliance. LADWP has submitted an interim operations plan and schedule for the required reservoir improvements, and executed a Compliance Agreement with CDPH. The estimated cost to modify the six reservoirs is \$1.65 billion with a compliance schedule in which the last reservoir will be removed from service in 2022.



LT2 improves on the SWTR by requiring further protection of open distribution reservoirs from microbial pathogens like Cryptosporidium and Giardia. In preparation for compliance with this rule, LADWP has been routinely monitoring its water sources for microbial pathogens since 2005. Although Cryptosporidium and Giardia are infrequently detected in very low quantities in some of our reservoirs, and in the L.A. Aqueduct, LADWP is fully committed to bringing the six reservoirs into compliance with the LT2. Below is a standard statement from CDPH regarding Cryptosporidium.

“Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks.

However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate

precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.”

## Message for Radon

Radon is a naturally occurring radioactive gas that is, for the most part, not a significant issue in most of California. In 2008, very low levels of radon were detected in some of our water supplies that serve the Central Los Angeles area (see Table III on pages 12-13). There is no established drinking water standard or monitoring requirement for radon. In general, radon entering a home through tap water is a very small contributor to radon in indoor air. Although the radon levels were well below what the EPA is currently considering as a standard, the EPA has asked us to share the following general information with you to help you better understand radon.

“Radon is a radioactive gas that you can’t see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air



## Water home treatment systems

**Q:** “If LADWP water quality is so great, why do some people filter their tap water.”

**A:** LADWP’s priority is to ensure that water of the highest quality reaches customer homes. However, there are situations where some customers’ homes or businesses have privately owned sub-standard illegal, old, improperly installed and/or improperly maintained plumbing on their property that can adversely affect the quality, appearance and taste of water coming from the tap. We understand that replacing home plumbing can be an expensive proposition. So, if you believe that your plumbing is causing a water quality problem, you may want to use a low-cost, point-of-use filter to improve your home or business’ water quality at the tap.

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# City Water Sources

## San Fernando Valley Communities

Sources: Los Angeles Aqueduct, local groundwater, and MWD State Water Project.

Arleta	Northridge	Tarzana
Canoga Park	Olive View	Toluca Lake
Chatsworth	Pacoima	Tujunga
Encino	Panorama City	Valley Village
Granada Hills	Porter Ranch	Van Nuys
Hollywood Hills	Reseda	Warner Center
Lake View	Sherman Oaks	West Hills
Terrace	Studio City	Winnetka
Mission Hills	Sun Valley	Woodland Hills
North Hills	Sunland	
North Hollywood	Sylmar	

## Western Los Angeles Communities

Sources: Los Angeles Aqueduct and MWD State Water Project.

Bel Air Estates	Mar Vista	West Los Angeles
Beverly Glen	Pacific Palisades	Westchester
Brentwood	Palisades	Westwood
Castellamare	Highlands	
Century City	Palms	
Cheviot Hills	Playa del Rey	
Culver City (parts of)	Sawtelle	
	Venice	

## Eastern Los Angeles Communities

Sources: MWD State Water Project and Colorado River Aqueduct.

Atwater Village	El Sereno	Heights
Boyle Heights	Glassell Park	Monterey Hills
Cypress Park	Highland Park	Mt. Washington
Eagle Rock	Lincoln Heights	
Echo Park	Montecito	

## Central Los Angeles Communities

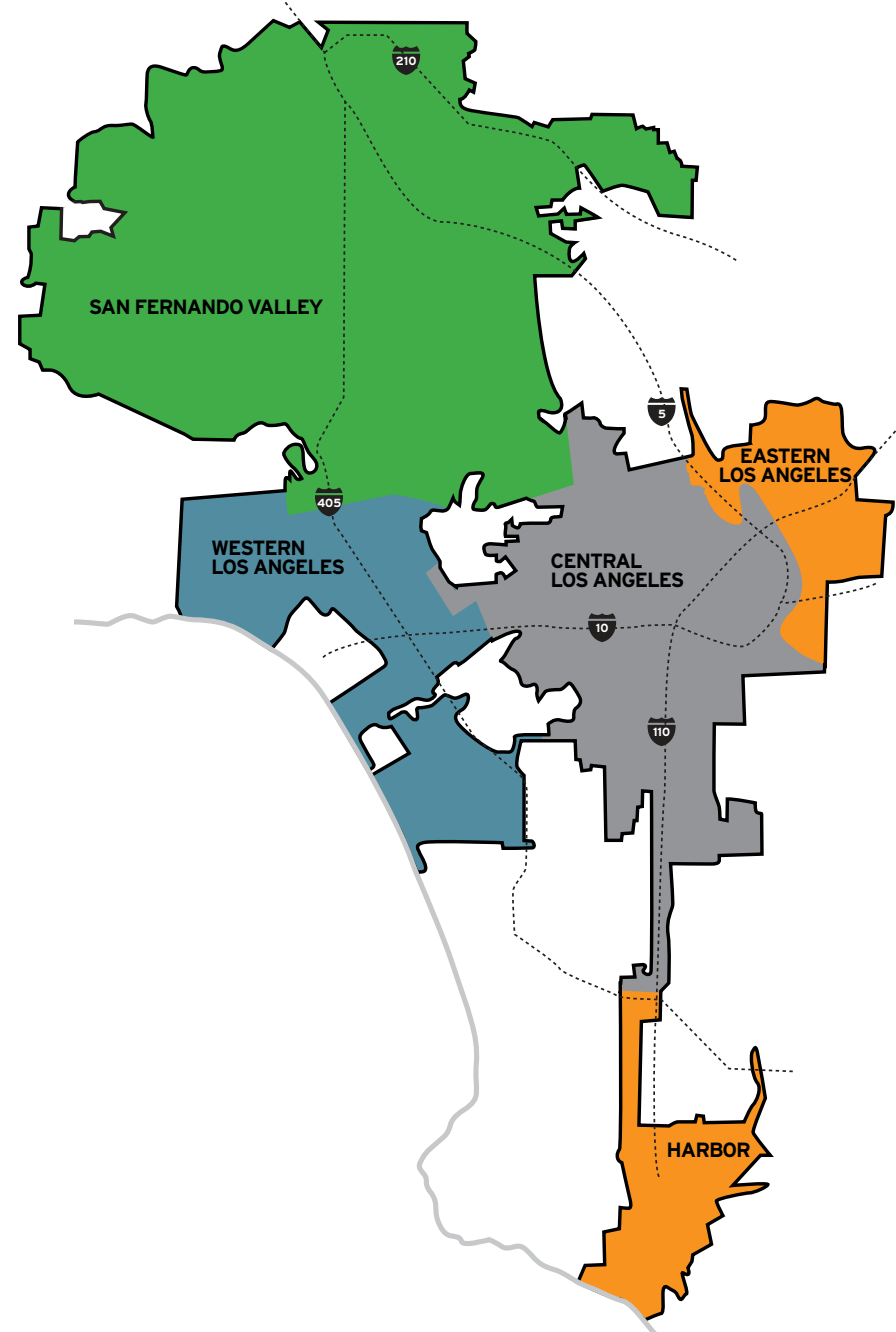
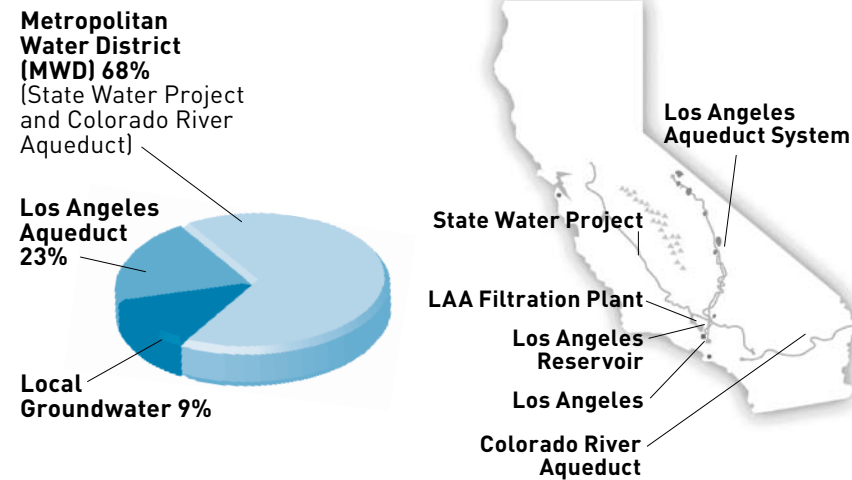
Sources: Los Angeles Aqueduct, MWD State Water Project, and local groundwater.

Baldwin Hills	Hyde Park	Park La Brea
Chinatown	Koreatown	Rancho Park
Country Club Park	LA City Strip (parts of)	Silverlake
Crenshaw	Little Tokyo	Watts
Griffith Park	Los Feliz	West Hollywood (parts of)
Hancock Park	Mid City	Westlake
Hollywood	Mt. Olympus	

## Harbor Communities

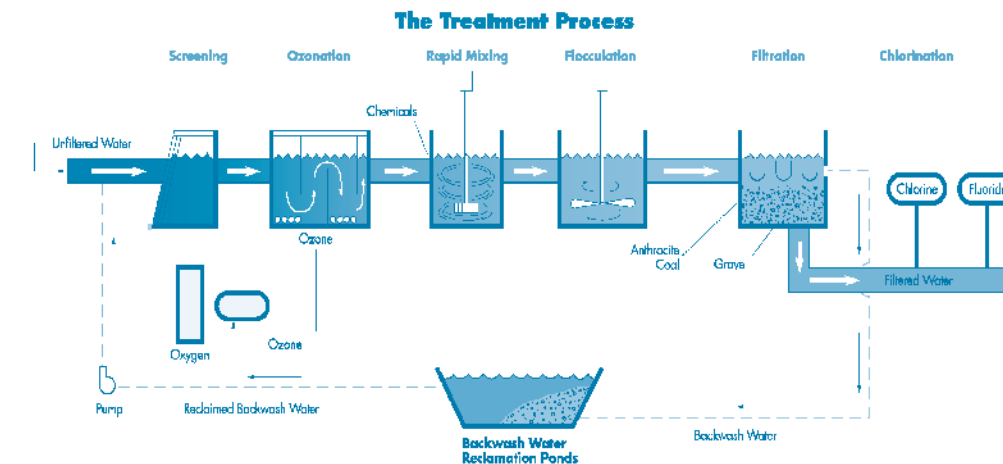
Sources: MWD State Water Project and Colorado River Aqueduct.

East San Pedro (Terminal Island)	Harbor Gateway (parts of)	(parts of) San Pedro
Harbor City	LA City Strip	Wilmington



# Surface Water Treatment

All water coming from the Los Angeles Aqueduct, the California Aqueduct, and the Colorado River Aqueduct is filtered and treated to ensure a safe drinking water supply. At the Los Angeles Aqueduct Filtration Plant, water is treated as follows:



Water flows into the filtration plant by gravity and travels through a screener to remove environmental debris such as twigs and dead leaves. The process injects ozone, a super-charged oxygen molecule and a powerful disinfecting agent into the water to destroy bacteria and other impurities that affect taste, odor and color. Chemicals are quickly dispersed into the water to make fine particles called floc. A 6-foot-deep filter (crushed coal over gravel) then removes the flock and previously added chemicals. Chlorine added during the final step ensures lasting disinfection and protects the water as it travels through the City's distribution system. Fluoride is optimized to promote oral health by strengthening tooth enamel.

## Groundwater Treatment

The City's vast groundwater supply in the San Fernando Valley and Central Basin are generally clean and clear. However, LADWP also disinfects this groundwater with chlorine as a safeguard against microorganisms and adds optimal amounts of fluoride to promote oral health.

Because of a history of contaminants found in the San Fernando Valley groundwater wells, LADWP adheres to strict operating limits to keep trichloroethene (TCE), tetrachloroethene (PCE), hexavalent chromium, perchlorate and nitrates far below the maximum contaminant levels (MCLs) permitted by federal or state regulations. This provides an additional safety margin for City customers. Additionally, blending allows the use of wells that would be otherwise unavailable. In the long term, additional well field treatment will become necessary. LADWP is formulating a comprehensive groundwater treatment plan for the San Fernando Basin that will address current and future contaminants of concern.

## Water Taste

**Q:** "I know my tap water is pure, but I think it should taste better. Is there anything I can do?"

**A:** Fill a pitcher or container with water and let it sit in the refrigerator for about an hour before you drink from it. This simple step is surprisingly transformative in reducing the smell and taste of chlorine. Chlorine is a necessary addition to water, because it acts as a disinfectant and protects the water as it travels in the thousands of miles of pipe we have beneath the City. Give this tip a try and see for yourself.



# Report for All Water Quality Areas

Tables I-III list the results of water tests performed by LADWP and MWD from January to December 2008. LADWP tests for over 200 contaminants. These tables include only contaminants with values that are equal to or greater than the limit of detection.

## Calendar Year 2008 Water Quality Monitoring Results

### Table I

#### Health-Based Primary Drinking Water Standards Contaminants Detected in Treated Water

Contaminants	Units	Los Angeles Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Diemer Filtration Plant		MWD Jensen Filtration Plant		MWD Weymouth Filtration Plant		State and Federal Primary Standard (MCL or MRDL)	Meet Primary Standard?	State PHG or (Federal MRDLG or MCLG)	Major Sources in Our Drinking Water
		Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average				
Alpha Emitters (a)	pCi/L	<3.0 – 5.5	3.6	3.2 – 6.0	4.3	<3.0 – 6.0	4.3	3.8 – 9.3	5.6	<3.0 – 7.3	3.4	<3.0 – 7.6	5.2	15	YES	(0)	Erosion of natural deposits
Aluminum	µg/L	<50	<50	<50	<50	<50	<50	78 - 280	164	56 - 120	95	60 - 250	148	1000	YES	600	Residue from surface water treatment process; erosion of natural deposits
Arsenic	µg/L	<2.0 – 8.1	3.3	<2.0 – 3.9	2.4	<2.0 – 3.9	2.4	<2.0 – 2.9	2.4	2.0 – 2.8	2.3	<2.0 – 2.7	2.4	10	YES	0.004	Erosion of natural deposits; natural hot springs
Barium	µg/L	<100	<100	<100	<100	<100 - 130	<100	111 - 123	117	<100	<100	107 - 125	116	1000	YES	2000	Erosion of natural deposits
Beta Emitters (a)	pCi/L	<4.0	<4.0	<4.0	<4.0	<4.0 – 4.4	<4.0	<4.0 – 6.4	4.3	<4.0 – 5.2	<4.0	<4.0 – 9.7	4.2	50	YES	(0)	Decay of natural and man-made deposits
Bromate (f)	µg/L	<5.0 – 7.1	<5.0	NA	NA	NA	NA	NA	NA	<5.0 - 10	7.8	NA	NA	10	YES	(0)	By-product of ozone disinfection
Cryptosporidium	oocysts/10 liters	<1 - 2	<1	NT	NT	NT	NT	<1	<1	<1	<1	<1	<1	TT	YES	(0)	Naturally present in environment
Giardia	cysts/10 liters	<1 - 1	<1	NT	NT	NT	NT	<1	<1	<1	<1	<1	<1	TT	YES	(0)	Naturally present in environment
Nitrate (as NO3)	mg/L	<2.0 – 2.3	<2.0	<2.0 – 13	6.4	<2.0 - 12	6.4	<2.0 – 2.7	2.2	2.7 – 4.0	3.1	<2.0 – 2.7	2.2	45	YES	45	Erosion of natural deposits; runoff and leaching from fertilizer use
Nitrate + Nitrite (as Nitrogen)	mg/L	<0.4 – 0.5	0.4	<0.4 – 3.0	1.4	<0.4 – 2.8	1.4	<0.4 - 0.6	0.5	0.6 – 0.9	0.7	<0.4 – 0.6	0.5	10	YES	10	Erosion of natural deposits; runoff and leaching from fertilizer use
Tetrachloroethylene [PCE]	µg/L	<0.5	<0.5	<0.5 – 1.6	<0.5	<0.5 – 0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	YES	0.06	Discharge from factories, dry cleaners, auto shops (metal degreaser)
Trichloroethene [TCE]	µg/L	<0.5	<0.5	<0.5 – 2.8	0.6	<0.5 – 1.3	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	YES	0.8	Discharge from metal degreasing sites and other factories
Turbidity (b)	NTU	0.27	100%	NA	NA	NA	NA	0.05	100%	0.06	100%	0.05	100%	TT	YES	none	Soil runoff
Uranium (a)	pCi/L	2.8 – 3.0	2.8	2.4 – 3.0	2.8	2.2-4.6	2.8	2.9 – 3.7	3.3	1.6 – 2.0	1.8	2.4 – 3.4	2.9	20	YES	0.43	Erosion of natural deposits

#### Health-Based Primary Drinking Water Standards Contaminants Detected in Distribution System and Reported on City-Wide Basis

Constituents/Contaminants	Units	Range	Average	State and Federal Primary Standard (MCL or MRDL)	Meet Primary Standard ?	State PHG or (Federal MRDLG or MCLG)	Major Sources of Contaminants in Our Drinking Water
Copper (at-the-tap) (c)	µg/L	number of samples exceeding AL = 1 out of 106	90th Percentile value = 802	TT, AL=1300 (d)	YES	300	Internal corrosion of household water plumbing systems
Fluoride	mg/L	Range = 0.14 - 1.2	Average = 0.67	2	YES	1	Erosion of natural deposits; water additive that promotes strong teeth
Lead (at-the-tap) (c)	µg/L	number of samples exceeding AL = 2 out of 106	90th Percentile value = 10	TT, AL=15 (d)	YES	2	Internal corrosion of household water plumbing systems
Total Chlorine Residual	mg/L	Range = 0.0 – 5.0	Average = 1.7	4.0	YES	(4.0)	Drinking water disinfectant added for treatment
Total Coliform Bacteria	% Positives	Range: 0.0 - 1.2% Coliform positive samples	Average = 0.38 % Coliform positive samples (b)	5% of monthly samples are coliform positive	YES	(0)	Naturally present in the environment
Total Haloacetic Acids	µg/L	Range = 4.5 - 143	City-wide Highest Running Annual Average = 29	60	YES	none	By-product of drinking water disinfection
Total Trihalomethanes [TTHM]	µg/L	Range = 16 - 130	City-wide Highest Running Annual Average = 62	80	YES	none	By-product of drinking water chlorination



## How to Read the Tables

The constituents/contaminants found in the water served in your area are listed as follows:

- For **San Fernando Valley Area** – water test results are under the Los Angeles Aqueduct Filtration Plant, the Northern Combined Wells, and MWD Jensen Filtration Plant columns
- For **Western Los Angeles Area** – water test results are under the Los Angeles Aqueduct Filtration Plant column
- For **Central Los Angeles Area** – water test results are under the Los Angeles Aqueduct Filtration Plant and the Southern Combined Wells columns
- For **Harbor/Eastern Los Angeles Area** – water test results are under the MWD Jensen, Weymouth, and Diemer Filtration Plants columns

Some constituents/contaminants detected are reported on a citywide basis as required by the California Department of Public Health.

The unregulated contaminants reported on an area-wide basis are included for additional information on the water served in your area.



# Calendar Year 2008 Water Quality Monitoring Results

## Table II

### Aesthetic-Based Secondary Drinking Water Standards Constituents/Contaminants Detected in Treated Water

Constituents/Contaminants	Units	Los Angeles Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Diemer Filtration Plant	
		Range	Average	Range	Average	Range	Average	Range	Average
Aluminum	µg/L	<50	<50	<50	<50	<50	<50	78 - 280	164
Chloride	mg/L	32 - 72	55	38 - 73	60	25 - 100	60	92 - 103	96
Color	Units	3 - 5	4	3 - 4	4	3 - 8	4	1 - 2	2
Foaming Agents (MBAS)	µg/L	<50	<50	<50	<50	<50 - 160	<50	<50	<50
Manganese NL = 500	µg/L	<20	<20	<20	<20	<20 - 48	<20	<20	<20
Odor	TON	<1	<1	<1 - 1	<1	<1 - 1	<1	2	2
Specific Conductance	µS/cm	417 - 504	462	456 - 769	570	456 - 1040	570	837 - 1080	947
Sulfate	mg/L	34 - 54	44	45 - 165	77	48 - 248	77	170 - 272	212
Total Dissolved Solids [TDS]	mg/L	241 - 292	265	269 - 482	345	269 - 672	345	505 - 668	569
Turbidity	NTU	0.0 - 0.15	0.09	0.0 - 0.35	0.25	0.0 - 0.9	0.25	0.04 - 0.05	0.05
Zinc	µg/L	<50	<50	<50	<50	<50 - 653	<50	<50	<50

MWD Jensen Filtration Plant		MWD Weymouth Filtration Plant		State and Federal Secondary MCL	Meet Secondary Standard?	Major Sources in Our Drinking Water
Range	Average	Range	Average			
56 - 120	95	60 - 250	148	200	YES	Residue from some surface water treatment process; erosion of natural deposits;
72 - 80	75	92 - 104	96	500	YES	Runoff/leaching from natural deposits; seawater influence
1 - 2	2	1-3	2	15	YES	Naturally-occurring organic matter
<50	<50	<50	<50	500	YES	Municipal and industrial discharges
<20	<20	<20	<20	50	YES	Leaching from natural deposits
2	2	3	3	3	YES	Naturally occurring organic materials
516 - 591	552	810 - 1090	941	1600	YES	Substances that form ions when in water; seawater influence
47 - 71	58	159 - 275	209	500	YES	Runoff/leaching from natural deposits
283 - 333	307	487 - 678	565	1000	YES	Runoff/leaching from natural deposits
0.04-0.05	0.04	0.05 - 0.06	0.06	5	YES	Soil runoff
<50	<50	<50	<50	5000	YES	Corrosion control additive; runoff/leaching from natural deposits

## Abbreviations and Footnotes

< = less than (example: In Table 1, Aluminum has an average value of <50 for Los Angeles Aqueduct Filtration Plant. This means that the average value is less than 50 micrograms per liter, which is the lowest detection level (DLR) for reporting Aluminum.)  
 % = Total coliform is reported for compliance as percentage of positive samples, but the unit for analytical reporting of total coliform bacteria is Colony Forming Units per 100 milliliters (CFU/100 ml) of sample.  
 mg/L = milligrams per liter (equivalent to ppm)  
 NA = Not applicable  
 ng/L = nanograms per liter (equivalent to ppt)

NT = Not tested  
 NTU = Nephelometric Turbidity Units; Turbidity is a measure of the cloudiness of the water. High turbidity can hinder the effectiveness of disinfectants.  
 pCi/L = picoCuries per liter  
 TON = Threshold Odor Number  
 µg/L = micrograms per liter (equivalent to ppb)  
 µS/cm = microSiemens per centimeter

(a) Radiological data for LADWP samples are based on 2006 and 2008 monitoring. Radiological monitoring is done every three years.  
 (b) The new reporting requirement for treatment plant turbidity is: report the highest single measurement and the lowest monthly percentage of measurement that is less than or equal to 0.3 NTU. The turbidity level of the water from water filtration treatment plant must be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU at any time. Turbidity is a measure of the cloudiness of the water

and is a good indicator of water quality and filtration performance.  
 (c) At-the-tap monitoring was conducted in 2006 according to the Federal Lead and Copper Rule guidelines. Although the City's source and treated waters have little if any detectable lead, studies were conducted and corrosion control is scheduled for implementation, as required by the Lead and Copper Rule.  
 (d) A system is out of compliance if the Action Level is exceeded in the 90th percentile of all samples at the customer's tap.  
 (e) Corrosivity values were taken from calculated

Langelier Index: negative value means that the water may be corrosive, positive value means that the water is non-corrosive.  
 (f) Bromate is a by-product of ozonation and is tested in water treated with ozone. Bromate has also been found in certain LADWP reservoirs with high bromide and exposed to sunlight and chlorine. See "Update on Bromate", page 14. Diemer and Weymouth filtration plants will eventually use ozone to treat the water.  
 (g) Bromide data for MWD Treatment Plants are from the plant influent.

## Protecting the Distribution System

The LADWP Cross-Connection Control Program has protected our water distribution system for more than 50 years by keeping water impurities from entering the public drinking water system after the water has been treated. State regulations require water agencies to have a Cross-Connection Control Program to prevent the backflow of any contaminants into the public drinking water system.

Once water is delivered to customers across the City, it may be used for many industrial or commercial purposes, some of which may bring that water in contact with chemicals. If a sudden drop in water pressure should occur, these contaminants could find their way into the City's water distribution system, unless there is a way to prevent such tainted water from re-entering the water system. It is the job of LADWP's Cross-Connection Control Unit (Unit) to prevent this type of situation from occurring.

The Unit has five highly-trained and dedicated cross-connection control specialists who administer a systematic inspection and testing program of all backflow prevention assemblies installed in the City. These inspectors conduct water-use surveys of industrial, institutional and commercial facilities to determine if the customer's water use represents a hazard to the water distribution system and based on the results, may order the customer to install a backflow assembly. There are over 10,000 backflow assemblies throughout the City with the number growing rapidly as new construction increases.

Yearly testing of backflow assemblies helps ensure they are functioning properly so that the water system is protected. In addition, as the popularity and use of reclaimed water increases throughout the City, the specialists inspect all recycled water sites on an annual basis to ensure that the water is used in a safe manner and eliminated any potential cross-connections found.



LADWP Cross Connection staff

## Water Appearance

**Q:** "Sometimes my water looks cloudy. What does this mean?"

**A:** It may seem a little hard to visualize, but all water has a certain amount of air dissolved in it. At certain times of the year when the temperature of the water in the pipes is much lower than in your home, upon release at your tap, the dissolved air in the water starts to escape as bubbles. The bubbles are very small and plentiful, making the water look cloudy. Fill your glass, let it rest for a minute or two and you will see the bubbles disappear from the bottom up, leaving you with a refreshing serving of LA's finest water.

# Calendar Year 2008 Water Quality Monitoring Results

## Table III

### Unregulated Constituents/Contaminants Detected in Treated Water

Constituents/Contaminants	Units	Los Angeles Filtration Plant		Northern Combined Wells		Southern Combined Wells	
		Range	Average	Range	Average	Range	Average
Alkalinity	mg/L	90 - 132	106	97 - 161	116	97 - 196	116
Boron NL = 1000	µg/L	261 - 612	395	169 - 402	316	110 - 402	316
Bromide (g)	µg/L	20 - 44	30	<20 - 51	<20	<20 - 102	<20
Calcium	mg/L	27 - 30	29	28 - 73	44	28 - 82	44
Chromium, Hexavalent	µg/L	<1.0	<1.0	<1.0 - 2.8	<1.0	<1.0 - 3.0	<1.0
Magnesium	mg/L	7.4 - 11	9.1	8.8 - 19	13	8.8 - 28	13
N-Nitrosodimethylamine (NDMA) NL=10	ng/L	NA	NA	NA	NA	NA	NA
pH	units	7.2 - 7.7	7.4	7.0 - 7.8	7.5	7.2 - 7.9	7.5
Phosphate (as Phosphorus)	µg/L	<10 - 24	15	20 - 33	20	<10 - 262	20
Potassium	mg/L	3.2 - 4.3	3.6	3.2 - 4.0	3.6	2.8 - 4.9	3.6
Radon (a)	pCi/L	<100	<100	<100 - 167	167	<100 - 613	167
Silica	mg/L	16 - 18	17	17 - 23	19	8.7 - 24	19
Sodium	mg/L	43 - 54	49	37 - 62	54	44 - 101	54
Total Hardness (as CaCO <sub>3</sub> )	mg/L	103 - 124	113	115 - 260	166	115 - 282	166
Total Organic Carbon [TOC]	mg/L	1.6 - 1.8	1.7	0.65 - 1.7	1.2	<0.3 - 2.2	1.2
Trichloropropane (1,2,3-TCP) NL = 5	ng/L	<5.0	<5.0	<5.0 - 6.4	<5.0	<5.0 - 6.4	<5.0
Vanadium NL = 50	µg/L	<3.0	<3.0	<3.0 - 6.5	<3.0	<3.0 - 4.3	<3.0

MWD Diemer Filtration Plant		MWD Jensen Filtration Plant		MWD Weymouth Filtration Plant		Major Sources in Our Drinking Water
Range	Average	Range	Average	Range	Average	
100 - 121	110	81 - 92	86	101 - 122	109	Erosion of natural deposits
130-150	140	150 - 200	180	130-160	150	Erosion of natural deposits
<20-120	70	220-260	240	<20-140	80	Runoff/leaching from natural deposits; seawater influence
55 - 72	61	23-32	28	52 - 74	60	Erosion of natural deposits; natural hot springs
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Industrial discharge; erosion of natural deposits
22 - 29	25	11 - 13	12	21 - 29	25	Erosion of natural deposits
<2.0-2.7	<2.0	2.4-7.4	4.0	<2.0	<2.0	By-product of chloramination
8.0 - 8.2	8.1	8.2 - 8.4	8.3	8.0 - 8.2	8.1	Naturally occurring dissolved gases and minerals
NT	NT	NT	NT	NT	NT	Erosion of natural deposits, agricultural run-off
4.1 - 4.9	4.5	2.6 - 3.0	2.8	4.0 - 5.2	4.5	Erosion of natural deposits
<100	<100	<100	<100	<100	<100	Decay of natural deposits
NT	NT	NT	NT	NT	NT	Erosion of natural deposits
85 - 106	94	56 - 68	61	84 - 109	94	Erosion of natural deposits
226 - 300	257	108-130	121	214 - 308	253	Erosion of natural deposits
1.9 - 2.5	2.3	1.5 - 1.9	1.7	1.7 - 2.4	2.2	Erosion of natural deposits
<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	Discharge from metal degreasing sites and other factories
3.5 - 4.0	3.8	4.6 - 5.1	4.9	3.1 - 4.0	3.6	Erosion of natural deposits

## Terms Used in Tables

**Detection Limit for Reporting Purposes (DLR):** The DLR is the lowest level at which all CDPH certified laboratories can accurately and reliably detect a compound. The DLR provides a standardized basis for reporting purposes. For example, if two separate laboratories report that lead is "not detected," it is understood that the amount of lead in both waters was less than the DLR for lead.

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

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs) (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect odor, taste, and appearance of drinking water. For certain contaminants, compliance with the MCL is based on the average of all samples taken throughout the year.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the EPA. For known or suspected carcinogens, EPA automatically sets the level at zero.

**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 EPA.

**Milligram per liter (mg/L), microgram per liter (µg/L), nanogram per liter (ng/L):** These are units of measure used to indicate the amount of a contaminant in a certain volume of water. One milligram per liter is equivalent to one part per million (ppm). Likewise, one microgram per liter is equivalent to one part per billion (ppb) and one nanogram per liter is equivalent to one part per trillion (ppt).

**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 Office of Environmental Health Hazard Assessment.

**Treatment Technique (TT):** A required treatment process intended to reduce the level of a contaminant in drinking water. For example, the filtration process is a treatment technique used to reduce turbidity (the cloudiness in water) and microbial contaminants from surface water. High turbidities may be indicative of poor or inadequate filtration.

**Notification Levels (NL):** Health-based advisory levels established by CDHS for chemicals in drinking water that lack maximum contaminant levels (MCLs). When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.

**Regulatory Action Level (AL) - Federal:** The concentration of a contaminant established by EPA that, if exceeded, triggers treatment or other requirements that a water system must follow.

## Disinfection By-Product of Chlorination Reported on Area-Wide Basis

Contaminants	Units	Central Los Angeles		Harbor / Eastern Los Angeles		San Fernando Valley		Western Los Angeles		Major Sources of Contaminants In Our Drinking Water
		Range	Average	Range	Average	Range	Average	Range	Average	
Bromodichloromethane [BDCM]	µg/L	3.8 - 49	19	8.2 - 36	16	6.8 - 46	19	5.9 - 48	26	Disinfection by-product of chlorination
Bromoform	µg/L	2.3 - 15	7.0	2.8 - 12	6.8	0.78 - 18	9.6	0.82 - 18	7.4	Disinfection by-product of chlorination
Chlorate NL = 800	µg/L	74 - 361	223	NA	NA	22 - 536	272	376 - 965	622	Disinfection by-product of chlorination
Chloroform	µg/L	1.8 - 64	15	4.2 - 26	13	3.7 - 37	11	4.0 - 76	28	Disinfection by-product of chlorination
Dibromochloromethane [DBCM]	µg/L	5.7 - 40	21	9.3 - 33	18	5.4 - 39	25	6.0 - 39	24	Disinfection by-product of chlorination
Haloacetic Acids	Units	Range	Average	Range	Average	Range	Average	Range	Average	Major Sources of Contaminants In Our Drinking Water
Dibromoacetic Acid	µg/L	2.0 - 18	7.7	3.2 - 15	5.1	<1.0 - 18	9.4	3.0 - 19	12	Disinfection by-product of chlorination
Dichloroacetic Acid	µg/L	<1.0 - 32	11	2.6 - 21	7.7	3.6 - 34	11	3.0 - 104	32	Disinfection by-product of chlorination
Monobromoacetic Acid	µg/L	<1.0 - 4.0	2.0	<1.0 - 3.1	<1.0	<1.0 - 10	1.9	<1.0 - 4.0	3.0	Disinfection by-product of chlorination
Monochloroacetic Acid	µg/L	<1.0 - 7.0	3.0	<1.0 - 18	2.5	<1.0 - 15	2.5	<1.0 - 25	6.0	Disinfection by-product of chlorination
Trichloroacetic Acid	µg/L	<1.0 - 11	5.0	1.7 - 9.3	5.6	1.0 - 10	3.6	2.0 - 76	18	Disinfection by-product of chlorination





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## About This Report

The 2008 Water Quality Report was prepared by the Los Angeles Department of Water and Power (LADWP). This report is required by the California Department of Public Health (CDPH) and was prepared in accordance with CDPH guidelines. It was produced and mailed to you at a cost of 43 cents.

### Contact Information

LADWP, the largest municipal utility in the nation, was established more than 100 years ago to provide a reliable and safe water and electric supply to the City's 4 million residents and businesses.

LADWP is governed by a five-member Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council. The Board meets regularly on the first and third Tuesdays of each month at 1:30 p.m. Meetings are held at:  
Los Angeles Department of Water and Power  
111 North Hope Street, Room 1555H  
Los Angeles, CA 90012-2694

The meeting agenda is available to the public on the Thursday prior to the week of the meeting. You can access the Board agenda at [www.ladwp.com](http://www.ladwp.com) or by calling (213) 367-1351.

For general information about LADWP, call 1-800-DIAL DWP (1-800-342-5397) or visit [www.ladwp.com](http://www.ladwp.com).

For questions regarding water quality, call the LADWP Water Quality Customer Services Group at (213) 367-3182.

For questions regarding this report, please call Cesar Vitangcol at (213) 367-1767.

Want to know more about your drinking water and related regulations?

Los Angeles Department of Water and Power [www.ladwp.com](http://www.ladwp.com)  
California Department of Public Health (CDPH) [www.cdph.ca.gov](http://www.cdph.ca.gov)  
U.S. Environmental Protection Agency (EPA) [www.epa.gov](http://www.epa.gov)

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### Messages for Non-English-Speaking Customers

This report contains important information about your drinking water. If you have any questions regarding this report, please contact us at (800) 342-5397.

Este informe contiene información importante sobre su agua potable. Si tiene alguna pregunta sobre este informe, por favor comuníquese con nosotros llamando al (800) 342-5397.

**В этом отчете содержится важная информация о вашей питьевой воде. Если у вас есть вопросы по этому отчету, вы можете позвонить по телефону (800) 342-5397.**

این گزارش حاوی اطلاعات مهمی در مورد آب آشامیدنی شماست. چنانچه سوالی در مورد این گزارش دارید لطفاً با شماره تلفن (800) 342-5397 با ما تماس بگیرید.

この報告書には皆さんの飲料水に関する重要な情報が含まれています。この報告書に関して何かご質問があれば(800) 342-5397 までお問い合わせください。

Այս զեկղյցը պարունակում է կարեւոր տեղեկություններ ձեր խմելու ջրերի մասին: Այս խմելու մասին որեւէ հարցում ունենալու պարագային կարող էք հեռաձայնել մեզ՝ (800) 342-5397 հեռախոսահամարով:

يحتوي هذا التقرير على معلومات هامة عن مياه الشرب في لوس انجلوس. إذا كان لديك أسئلة عن هذا التقرير نرجو الاتصال بنا على الرقم (800) 342-5397.

이 보고서는 여러분의 수도물에 관한 중요한 정보를 포함하고 있습니다. 이 보고서에 관해 질문이 있으시면, (800) 342-5397 로 연락 주십시오.

本報告包含有關您的飲用水的重要資訊，您對本報告如有任何疑問，請致電：(800) 342-5397。

**Báo cáo này có tin tức quan trọng về nguồn nước uống của quý vị. Nếu quý vị có thắc mắc về báo cáo này, xin liên lạc với chúng tôi tại số (800) 342-5397.**

รายงานนี้ประกอบด้วยข้อมูลสำคัญเกี่ยวกับน้ำดื่มของท่าน ถ้าหากท่านมีคำถามใดๆเกี่ยวกับรายงานนี้ กรุณาติดต่อเราได้ที่ (800) 342-5397

## Water Quality News continued from page 5

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 is, in most cases, 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 or call EPA's Radon Hotline (800-SOS-RADON)."

### Update on Bromate

The LADWP continues to successfully minimize bromate levels in open reservoirs, and remain within regulatory requirements. One very creative intervention has been the use of "shade balls." In 2008 shade balls were used to shade the water surfaces of Elysian and Ivanhoe Reservoirs. As a result, bromate levels have been consistently well below the current drinking water standard of 10 parts per billion. You may expect to see the use of shade balls at other open reservoirs in coming years. In the long term, LADWP plans to permanently cover or replace all remaining uncovered reservoirs by 2022 as required by the LT2 regulation (please see Update on Enhanced SWTR, page 4). Meanwhile, all water served to our customers continues to meet all public health standards.

### Water Smell

**Q:** "Sometimes my water smells a bit like chlorine. Is this ok?"

**A:** Yes, it is. The faint chlorine smell is a result of what we use to disinfect and safeguard the water in the pipes - and is not harmful. If the smell bothers you, it will dissipate if you let the water rest on the counter or in the refrigerator for an hour before you drink it. That should do the trick.







2008 Annual Water Quality Report  
Los Angeles Department of Water and Power  
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Los Angeles, California 90051-0100

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# 2008 Annual Water Quality Report

Your Water Quality Questions Answered



# 2008 Annual Water Quality Report

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