

# The 2007 Water Quality Report

## Drinking Water Quality

Since 1990, California water utilities have been providing an Annual Water Quality Report to their customers. This year's report covers calendar year 2006 water quality testing, and has been prepared in compliance with regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The reauthorization charged the United States Environmental Protection Agency (USEPA) with updating and strengthening the tap water regulatory program and changed the report's due date to July 1.

USEPA and the California Department of Health Services (CDHS) are the agencies responsible for establishing drinking water quality standards. The federal Food and Drug Administration (FDA) also sets regulations for bottled water.

The City of Garden Grove vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets the standards required by the state and federal regulatory agencies. In some cases, your local utility goes beyond what is required to monitor for additional contaminants that have known health risks.

Unregulated contaminant monitoring helps USEPA determine where certain contaminants occur and whether it needs to establish regulations for those contaminants.



**City of Garden Grove**  
Public Works Department  
Water Service Division  
13802 Newhope Street  
Garden Grove, California 92843

PRESORT STD  
U.S. Postage  
**P A I D**  
Garden Grove, CA  
Permit No. 3

CRRT SORT

POSTAL CUSTOMER

## If you have any questions about your water, please contact us for answers...

For information about this report, or your water quality in general, please contact Zachary Barrett, Water Quality Supervisor, or Cel Pasillas, Larry Jones, or Alice Nguyen, Water Quality Technicians, at (714) 741-5395.

Public City Council meetings are held on the second and fourth Tuesdays of each month at 6:45 p.m. in the Council Chambers at the Community Meeting Center, 11300 Stanford Avenue, Garden Grove, California. You may also contact our City Clerk's Office, Garden Grove City Hall, 11222 Acacia Parkway, Garden Grove, CA 92840 or call (714) 741-5040 for information about Garden Grove City Council meetings. Please feel free to participate in these meetings.

For more information about the health effects of the listed contaminants in the following tables, call the U.S. Environmental Protection Agency hotline at (800) 426-4791.

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

*Spanish*

이 보고서는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 잘못히 이해하시는 친구와 상의하십시오.

*Korean*

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.

*Vietnamese*

PRODUCTION



ENGINEERING



DISTRIBUTION



WATER QUALITY



**GARDEN GROVE**  
WATER SERVICES DIVISION

**2007**  
**WATER QUALITY**  
**REPORT**

# What You Need to Know About Your Water, and How it May Affect You

## Sources of Supply

Your drinking water is a blend of mostly groundwater from the Orange County groundwater basin and also surface water imported by the Metropolitan Water District of Southern California. Metropolitan's imported water source is mostly the Colorado River, with augmentation by the State Water project from northern California. Your groundwater comes from a natural underground reservoir managed by the Orange County Water District that stretches from the Prado Dam and fans across the northwestern portion of Orange County, excluding the communities of Brea and La Habra, and stretching as far south as the El Toro 'Y'.

Last year, as in years past, your tap water met all USEPA and State drinking water health standards. The City of Garden Grove vigilantly safeguards its water supplies and once again we are proud to report that our system has never violated a maximum contaminant level or any other water quality standard. This brochure is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards. We are committed to providing you with information because informed customers are our best allies.

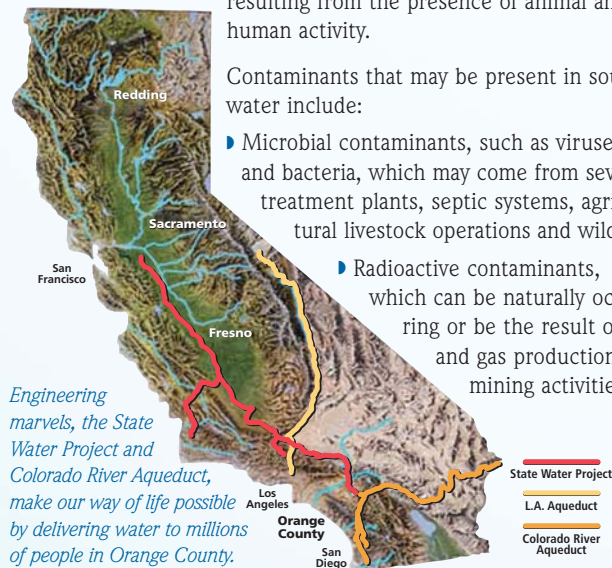
The City's source water comes from 12 groundwater wells. Imported water comes from the Sierra Nevada and the Colorado River area.

## Basic Information About Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the layers of the ground it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and human activity.

Contaminants that may be present in source water include:

- ▶ Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- ▶ Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production or mining activities.



- ▶ Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- ▶ Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- ▶ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban storm water runoff, agricultural application and septic systems.

In order to ensure that tap water is safe to drink, USEPA and the CDHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at (800) 426-4791.

## For Your Information...

**Disinfection:** Water provided by the City of Garden Grove contains chlorine used for disinfection and chloramines used by Metropolitan Water District, also for disinfection purposes. Customers on kidney dialysis should consult their physicians.

**Fish or Amphibians:** If you have fish or amphibians, make sure to remove any chloramines and chlorine before changing or adding water to the tanks. Remember, allowing drinking water to stand will

not remove chloramines. Consult your local aquarium store for products that will remove the disinfectants.

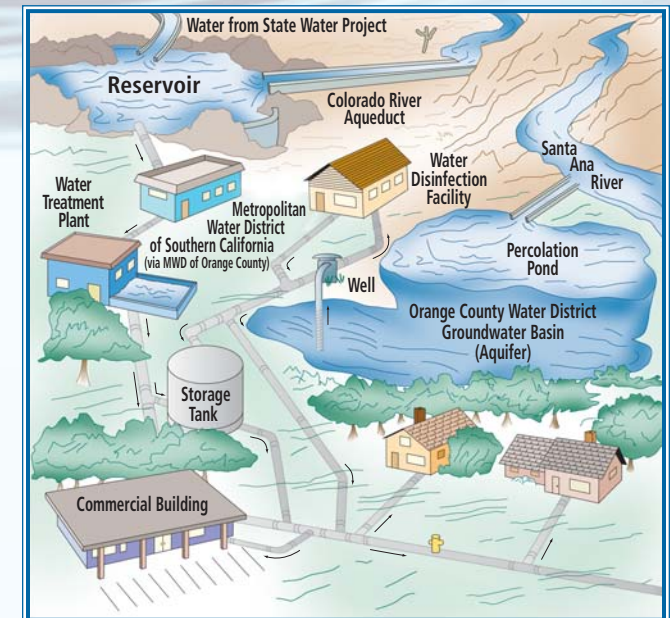
**Fluoride:** Fluoride does occur at low levels averaging about .5 ppm naturally in the well water. The City of Garden Grove does not currently add fluoride to the water supply.

**Water Hardness:** The City's well water is of high quality, but is considered very hard. After boiling water your pots may have a chalky white residue. This is normal and does not pose any health concern. The residue is mainly calcium carbonates and magnesium.

**Water Hardness and Installing Water Softeners:** The hardness level of the City of Garden Grove's water averages 18 grains per gallon. Set your softener's dial or indicator setting to 18.

**Hot Water Heaters:** Many odor complaints may be traced to the home's hot water heater. Remember to follow manufacturers instructions and flush hot water heaters regularly. This will flush out any sediments that may have accumulated, provide good water turnover to maximize water quality, and help keep your unit in good working order.

**Point of Use or Home Water Filtration Units:** Be vigilant in changing or cleaning any filters or media on your home units. Always follow the manufacturers instructions. Remember, the water is only as clean as the filter allows. Improperly maintained filters can deliver very poor quality water.



Imported water — from the Colorado River and northern California — travels hundreds of miles to meet the needs of Orange County. Water is also pumped from the groundwater basin that spans 350 square miles under north and central Orange County.

# The Continuing Quality of Your Water is Our Primary Concern

## Cryptosporidium

*Cryptosporidium* is a microscopic organism that, when ingested, can cause diarrhea, fever, and other gastrointestinal symptoms. The organism comes from animal and/or human wastes and may be in surface water. The Metropolitan Water District of Southern California tested their source water and treated surface water for *Cryptosporidium* in 2006 but did not detect it. If it ever is detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from USEPA's safe drinking water hotline at (800) 426-4791 between 9 a.m. and 5 p.m. Eastern Time (6 a.m. to 2 p.m. in California).

## Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, persons who have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

## Source Water Assessments

### Import (Metropolitan) Water Assessment

In December 2002, Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment can be obtained by contacting Metropolitan by phone at (213) 217-6850.

## Groundwater Assessment

An assessment of the drinking water sources for City of Garden Grove Water Services Division was completed in December 2002. The groundwater sources are considered most vulnerable to the following activities associated with contaminants detected in the water supply: Known contaminant plumes, historic agricultural activities and application of fertilizers, and parks. The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: Confirmed leaking underground storage tanks, dry cleaners, gas stations, and photo processing/printing.

A copy of the complete assessment is available at Department of Health Services Office of Drinking Water, Santa Ana District, 28 Civic Center Plaza Room 325, Santa Ana, CA 92701. You may request a summary of the assessment by contacting the City of Garden Grove Water Services Division at (714) 741-5395.

## Want Additional Information?

There's a wealth of information on the internet about Drinking Water Quality and water issues in general. Some good sites — both local and national — to begin your own investigation are:

[Municipal Water District of Orange County  
www.mwdoc.com](http://www.mwdoc.com)

[Orange County Water District  
www.ocwd.com](http://www.ocwd.com)

[Metropolitan Water District of Southern California  
www.mwdh2o.com](http://www.mwdh2o.com)

[California Department of Health Services, Division of Drinking Water and Environmental Management  
www.dhs.ca.gov/ps/ddwem](http://www.dhs.ca.gov/ps/ddwem)

[U.S. Environmental Protection Agency  
www.epa.gov/safewater/](http://www.epa.gov/safewater/)

## Table Definitions

**MCL (Maximum Contaminant Level):** 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 (2nd MCL) are set to protect the odor, taste, and appearance of drinking water.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

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

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**PHG (Public Health Goal):** 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.

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

**TT (Treatment Technique):** 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.

**Measurements:** Water is sampled and tested throughout the year. Contaminants are measured in parts per million (ppm), parts per billion (ppb), parts per trillion (ppt), and even parts per quadrillion (ppq). If this is difficult to imagine, think about these comparisons:

| Parts per million (mg/L): | Parts per billion (µg/L): |
|---------------------------|---------------------------|
| • 1 second in 12 days     | • 1 second in 32 years    |
| • 1 penny in \$10,000     | • 1 penny in \$10 million |
| • 1 inch in 16 miles      | • 1 inch in 16,000 miles  |

*It is important to note, however, that even a small concentration of certain contaminants can adversely affect a water supply.*

*The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.*

## Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

## Drinking Water Fluoridation

"Community water fluoridation continues to be the most cost-effective, practical and safe means for reducing and controlling the occurrence of tooth decay in a community."

~ U.S. Surgeon General

In fall 2007, the Metropolitan Water District of Southern California is scheduled to join a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay.

In line with recommendations from the California Department of Health Services, as well as the U.S. Centers for Disease Control and Prevention, Metropolitan will adjust the natural fluoride level in the water, which ranges from 0.1 to 0.4 parts per million, to the optimal range for dental health of 0.7 to 0.8 parts per million. Fluoride levels in drinking water are limited under California state regulations at a maximum dosage of 2 parts per million.

Fluoride has been added to U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water. There are many places to go for additional information about the fluoridation of drinking water. They include:

[U.S. Centers for Disease Control and Prevention  
1-888-CDC-2306  
www.cdc.gov/Oralhealth/factsheet/fl-background.htm](http://www.cdc.gov/Oralhealth/factsheet/fl-background.htm)

[American Dental Association](http://www.ada.org/public/topics/fluoride/fluor-links.html)

[www.ada.org/public/topics/fluoride/fluor-links.html](http://www.ada.org/public/topics/fluoride/fluor-links.html)

[American Water Works Association](http://www.awwa.org)

[www.awwa.org](http://www.awwa.org)

## 2006 City of Garden Grove Groundwater Quality

| Chemical                          | MCL      | PHG (MCLG) | Average Amount | Range of Detections | MCL Violation? | Most Recent Sampling Date | Typical Source of Contaminant |
|-----------------------------------|----------|------------|----------------|---------------------|----------------|---------------------------|-------------------------------|
| <b>Radiologicals</b>              |          |            |                |                     |                |                           |                               |
| Alpha Radiation (pCi/L)           | 15       | (0)        | 8.7            | 5.5 – 11            | No             | 2005                      | Erosion of Natural Deposits   |
| Uranium (pCi/L)                   | 20       | 0.43       | 9.4            | 5.8 – 12            | No             | 2005                      | Erosion of Natural Deposits   |
| <b>Organic Chemicals</b>          |          |            |                |                     |                |                           |                               |
| 1,1,1-Trichloroethane TCA (ppb)   | 200      | 1000       | < 0.5          | ND – 0.5            | No             | 2006                      | Industrial Contaminant        |
| 1,1-Dichloroethene DCE (ppb)      | 6        | 10         | < 0.5          | ND – 0.6            | No             | 2006                      | Industrial Contaminant        |
| <b>Inorganic Chemicals</b>        |          |            |                |                     |                |                           |                               |
| Aluminum (ppm)                    | 1 / 0.2* | 0.6        | < 0.05         | ND – 0.06           | No             | 2006                      | Erosion of Natural Deposits   |
| Arsenic (ppb)                     | 10       | 0.004      | < 2            | ND – 3.6            | No             | 2006                      | Erosion of Natural Deposits   |
| Barium (ppm)                      | 1        | 2          | < 0.1          | ND – 0.13           | No             | 2006                      | Erosion of Natural Deposits   |
| Fluoride (ppm)                    | 2        | 1          | 0.42           | 0.36 – 0.52         | No             | 2006                      | Erosion of Natural Deposits   |
| Nitrate (ppm as NO <sub>3</sub> ) | 45       | 45         | 14             | 2.1 – 20            | No             | 2006                      | Fertilizers, Septic Tanks     |
| Nitrate+Nitrite (ppm as N)        | 10       | 10         | 3.1            | 0.5 – 4.6           | No             | 2006                      | Fertilizers, Septic Tanks     |
| <b>Secondary Standards*</b>       |          |            |                |                     |                |                           |                               |
| Chloride (ppm)                    | 500*     | n/a        | 65             | 16 – 91             | No             | 2006                      | Erosion of Natural Deposits   |
| Color (color units)               | 15*      | n/a        | < 3            | ND – 3              | No             | 2006                      | Erosion of Natural Deposits   |
| Specific Conductance (µmho/cm)    | 1,600*   | n/a        | 784            | 436 – 1,010         | No             | 2006                      | Erosion of Natural Deposits   |
| Sulfate (ppm)                     | 500*     | n/a        | 115            | 38 – 181            | No             | 2006                      | Erosion of Natural Deposits   |
| Total Dissolved Solids (ppm)      | 1,000*   | n/a        | 490            | 276 – 618           | No             | 2006                      | Erosion of Natural Deposits   |
| Turbidity (ntu)                   | 5*       | n/a        | 0.22           | 0.1 – 0.3           | No             | 2006                      | Erosion of Natural Deposits   |

### Unregulated Contaminants Requiring Monitoring

|  |               |     |       |           |     |      |                             |
|--|---------------|-----|-------|-----------|-----|------|-----------------------------|
| Bicarbonate (ppm as HCO <sub>3</sub> )       | Not Regulated | n/a | 219   | 199 – 233 | n/a | 2006 | Erosion of Natural Deposits |
| Boron (ppm)                                  | Not Regulated | n/a | < 0.1 | ND – 0.17 | n/a | 2006 | Erosion of Natural Deposits |
| Calcium (ppm)                                | Not Regulated | n/a | 97    | 55 – 111  | n/a | 2006 | Erosion of Natural Deposits |
| Hexavalent Chromium (ppb)                    | Not Regulated | n/a | 1.1   | ND – 2.0  | n/a | 2006 | Erosion of Natural Deposits |
| Perchlorate (ppb)                            | Not Regulated | 6   | < 4   | ND – 4.9  | n/a | 2006 | Industrial Waste Discharge  |
| Magnesium (ppm)                              | Not Regulated | n/a | 17    | 9.1 – 21  | n/a | 2006 | Erosion of Natural Deposits |
| pH (pH units)                                | Not Regulated | n/a | 8.2   | 8.1 – 8.3 | n/a | 2006 | Acidity, hydrogen ions      |
| Potassium (ppm)                              | Not Regulated | n/a | 3.6   | 2.7 – 4.5 | n/a | 2006 | Erosion of Natural Deposits |
| Sodium (ppm)                                 | Not Regulated | n/a | 49    | 32 – 78   | n/a | 2006 | Erosion of Natural Deposits |
| Total Alkalinity (ppm as CaCO <sub>3</sub> ) | Not Regulated | n/a | 181   | 163 – 195 | n/a | 2006 | Erosion of Natural Deposits |
| Total Hardness (ppm as CaCO <sub>3</sub> )   | Not Regulated | n/a | 314   | 174 – 364 | n/a | 2006 | Erosion of Natural Deposits |
| Total Hardness (grains per gallon)           | Not Regulated | n/a | 18    | 10 – 21   | n/a | 2006 | Erosion of Natural Deposits |
| Vanadium (ppb)                               | Not Regulated | n/a | < 3   | ND – 4.7  | n/a | 2006 | Erosion of Natural Deposits |

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; ND = not detected; n/a = not applicable; < = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal µmho/cm = micromho per centimeter; \*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

## 2006 City of Garden Grove Distribution System Water Quality

| Disinfection Byproducts     | MCL (MRDL/MRDLG) | Average Amount | Range of Detections | MCL Violation? | Typical Source of Contaminant       |
|-----------------------------|------------------|----------------|---------------------|----------------|-------------------------------------|
| Total Trihalomethanes (ppb) | 80               | 22             | ND – 49             | No             | Byproducts of chlorine disinfection |
| Haloacetic Acids (ppb)      | 60               | 18             | ND – 45             | No             | Byproducts of chlorine disinfection |
| Chlorine Residual (ppm)     | (4 / 4)          | 1.5            | 0.90 – 1.8          | No             | Disinfectant added for treatment    |

### Aesthetic Quality

|                 |    |      |             |    |             |
|-----------------|----|------|-------------|----|-------------|
| Turbidity (ntu) | 5* | 0.16 | 0.12 – 0.32 | No | Soil runoff |
|-----------------|----|------|-------------|----|-------------|

Sixteen locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; thirty-three locations are tested each month for color, odor and turbidity. Color and odor were not detected. MRDL = Maximum Residual Disinfectant Level; MRDLG = Maximum Residual Disinfectant Level Goal; ntu = nephelometric turbidity units; ND = not detected; \*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

| Bacterial Quality       | MCL | MCLG | Highest Monthly Percent Positives | MCL Violation? | Typical Source of Contaminant        |
|-------------------------|-----|------|-----------------------------------|----------------|--------------------------------------|
| Total Coliform Bacteria | 5%  | 0    | 0.7%                              | No             | Naturally present in the environment |

No more than 5% of the monthly samples may be positive for total coliform bacteria. The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E.coli, constitutes an acute MCL violation. During the year 2006, one sample tested positive for total coliform bacteria out of 1,719 bacteriological samples taken. Repeat samples were taken at the original location. All repeat samples tested negative for total coliform bacteria.

## Lead and Copper Action Levels at Residential Taps

| Action Level (AL) | Health Goal | 90th Percentile Value | Sites Exceeding AL / Number of Sites | AL Violation? | Typical Source of Contaminant   |
|-------------------|-------------|-----------------------|--------------------------------------|---------------|---------------------------------|
| Lead (ppb)        | 15          | 2                     | ND<5<br>0 out of 50                  | No            | Corrosion of household plumbing |
| Copper (ppm)      | 1.3         | 0.17                  | 0.33<br>0 out of 50                  | No            | Corrosion of household plumbing |

Every three years, 50 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2004. Lead was detected in one home. This positive sample did not exceed the lead action level. Copper was detected in forty-four (44) samples, none of which exceeded the regulatory action level. A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

## 2006 Metropolitan Water District of Southern California Treated Surface Water

| Chemical                                      | MCL           | PHG, or (MCLG) | Average Amount | Range of Detections | MCL Violation? | Typical Source of Contaminant             |
|---|---------------|----------------|----------------|---------------------|----------------|---|
| <b>Radiologicals – Tested in 2006</b>         |               |                |                |                     |                |   |
| Alpha Radiation (pCi/L)                       | 15            | (0)            | 3.6            | ND – 7.2            | No             | Erosion of natural deposits               |
| Beta Radiation (pCi/L)                        | 50            | (0)            | <4             | ND – 4.7            | No             | Decay of man-made or natural deposits     |
| <b>Inorganic Chemicals – Tested in 2006</b>   |               |                |                |                     |                |   |
| Aluminum (ppm)                                | 1 / 0.2*      | 0.6            | <0.05          | ND – 0.06           | No             | Erosion of natural deposits               |
| Fluoride (ppm)                                | 2             | 1              | 0.15           | 0.12 – 0.18         | No             | Erosion of natural deposits               |
| Nitrate as NO <sub>3</sub> (ppm)              | 45            | 45             | 2.0            | ND – 3.0            | No             | Agriculture runoff and sewage             |
| Nitrate and Nitrite as N (ppm)                | 10            | 10             | 0.45           | ND – 0.68           | No             | Agriculture runoff and sewage             |
| <b>Secondary Standards* – Tested in 2006</b>  |               |                |                |                     |                |   |
| Chloride (ppm)                                | 500*          | n/a            | 66             | 47 – 97             | No             | Runoff or leaching from natural deposits  |
| Color (color units)                           | 15*           | n/a            | 2              | 1 – 2               | No             | Runoff or leaching from natural deposits  |
| Corrosivity (LSI)                             | non-corrosive | n/a            | 0.20           | 0.07 – 0.29         | No             | Elemental balance in water                |
| Odor (odor units)                             | 3*            | n/a            | 2              | 2                   | No             | Naturally-occurring organic materials     |
| Specific Conductance (µmho/cm)                | 1,600*        | n/a            | 652            | 536 – 810           | No             | Substances that form ions in water        |
| Sulfate (ppm)                                 | 500*          | n/a            | 132            | 106 – 159           | No             | Runoff or leaching of natural deposits    |
| Total Dissolved Solids (ppm)                  | 1,000*        | n/a            | 378            | 307 – 458           | No             | Runoff or leaching of natural deposits    |
| Turbidity (NTU)                               | 5*            | n/a            | 0.05           | 0.04 – 0.06         | No             | Runoff or leaching of natural deposits    |
| <b>Unregulated Chemicals – Tested in 2006</b> |               |                |                |                     |                |   |
| Alkalinity (ppm)                              | Not Regulated | n/a            | 77             | 71 – 84             | n/a            | Runoff or leaching from natural deposits  |
| Boron (ppb)                                   | Not Regulated | n/a            | 130            | ND – 160            | n/a            | Runoff or leaching from natural deposits  |
| Calcium (ppm)                                 | Not Regulated | n/a            | 37             | 31 – 43             | n/a            | Runoff or leaching from natural deposits  |
| Hardness, total (ppm)                         | Not Regulated | n/a            | 161            | 134 – 185           | n/a            | Runoff or leaching of natural deposits    |
| Hardness, total (grains/gal)                  | Not Regulated | n/a            | 9              | 8 – 11              | n/a            | Runoff or leaching of natural deposits    |
| Magnesium (ppm)                               | Not Regulated | n/a            | 17             | 13 – 20             | n/a            | Runoff or leaching from natural deposits  |
| N-Nitrosodimethylamine (ppt)                  | Not Regulated | 3              | <2             | ND – 2.3            | n/a            | By-product of drinking water chlorination |
| pH (pH units)                                 | Not Regulated | n/a            | 8.2            | 8.1 – 8.3           | n/a            | Hydrogen ion concentration                |
| Potassium (ppm)                               | Not Regulated | n/a            | 3.2            | 2.8 – 3.9           | n/a            | Runoff or leaching from natural deposits  |
| Sodium (ppm)                                  | Not Regulated | n/a            | 65             | 52 – 85             | n/a            | Runoff or leaching from natural deposits  |
| Total Organic Carbon (ppm)                    | Not Regulated | 11             | 2.3            | 1.9 – 2.7           | n/a            | Various natural and man-made sources      |
| Vanadium (ppb)                                | Not Regulated | n/a            | <3             | ND – 3.5            | n/a            | Runoff or leaching from natural deposits  |

ppb = parts-per-billion; ppm = parts-per-million; ppt = parts-per-trillion; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; µmho/cm = micromhos per centimeter;

ND = not detected; < = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal; n/a = not applicable; LSI = Langelier Saturation Index; \*Contaminant is regulated by a secondary standard.

| Turbidity – combined filter effluent       | Treatment Technique | Turbidity Measurements | TT Violation? | Typical Source of Contaminant |
|--|---------------------|------------------------|---------------|-------------------------------|
| 1) Highest single turbidity measurement    | 1 NTU               | 0.08                   | No            | Soil run-off                  |
| 2) Percentage of samples less than 0.3 NTU | 95%                 | 100%                   | No            | Soil run-off                  |

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. Low turbidity in Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT). A treatment technique is a required process intended to reduce the level of contaminants in drinking water that are difficult and sometimes impossible to measure directly.