

The 2008 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 2007 water quality testing, and has been prepared in compliance with regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The re-authorization charged the United States Environmental Protection Agency (USEPA) with updating and strengthening the tap water regulatory program.

USEPA and the California Department of Public Health (CDPH) are the agencies responsible for establishing drinking water quality standards. To ensure that your tap water is safe to drink, USEPA and CDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. The federal Food and Drug Administration (FDA) also sets regulations for bottled water.

The City of Newport Beach 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, the City of Newport Beach goes beyond what is required by testing for unregulated contaminants that may have known health risks. For example, the Orange County Water District, which manages our groundwater basin, monitors our groundwater for the solvent 1,4-dioxane.

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

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

For information about this report or your water quality information in general, please contact George Murdoch, Water Utility Manager, at (949) 718-3401. The City of Newport Beach Council meetings begin at 7:00 p.m. on the second and fourth Tuesday of each month and are open to the public. Meetings are held at the Council Chambers located at 3300 Newport Boulevard, Newport Beach. Matters from the public are heard at each meeting. 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.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

يحتوي هذا التقرير على معلومات هامة عن نوعية مياه الشرب في منطقتك. يرجى ترجمته، أو البحث التفردي مع صديقك ك تعلم هذه المعلومات جيداً.

Arabic

这份报告中有些重要的信息，讲到关于您所在社区的饮用水品质。请您找人翻译一下，或者请能看懂这份报告的朋友给您解释一下。

Chinese

Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.

French

Der Bericht enthält wichtige Informationen über die Wasserqualität in Ihrer Umgebung. Der Bericht sollte entweder offiziell übersetzt werden, oder sprechen Sie mit Freunden oder Bekannten, die gute Englischkenntnisse besitzen

German

इस रिपोर्ट में पीने के पानी के विषय पर बहुत जरूरी जानकारी दी गई है। कृपया इसका अनुवाद कीजिये, या किसी जानकार से इस बारे में पूछिये।

Hindi

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

Japanese

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나, 충분히 이해하시는 친구와 상의하십시오.

Korean

Este informe contiene información muy importante sobre su agua potable. Para más información o traducción, favor de contactar a Mr. G. Murdoch. Teléfono: (949) 718-3401.

Spanish

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

Vietnamese



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2008 Water Quality Report

City of
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Utilities Department

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

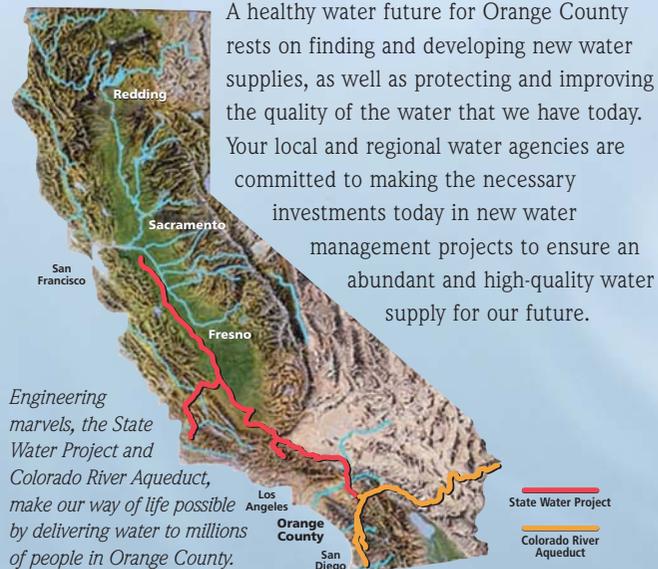
Sources of Supply

Orange County's water supplies are a blend of groundwater managed by the Orange County Water District (OCWD) and water imported from Northern California and the Colorado River by the Municipal Water District of Orange County (MWD) via the Metropolitan Water District of Southern California. Groundwater comes from a natural underground aquifer that is replenished with water from the Santa Ana River, local rainfall and imported water. The groundwater basin is 350 square miles and lies beneath north and central Orange County from Irvine to the Los Angeles border and from Yorba Linda to the Pacific Ocean. More than 20 cities and retail water districts draw from the basin to provide water to homes and businesses.

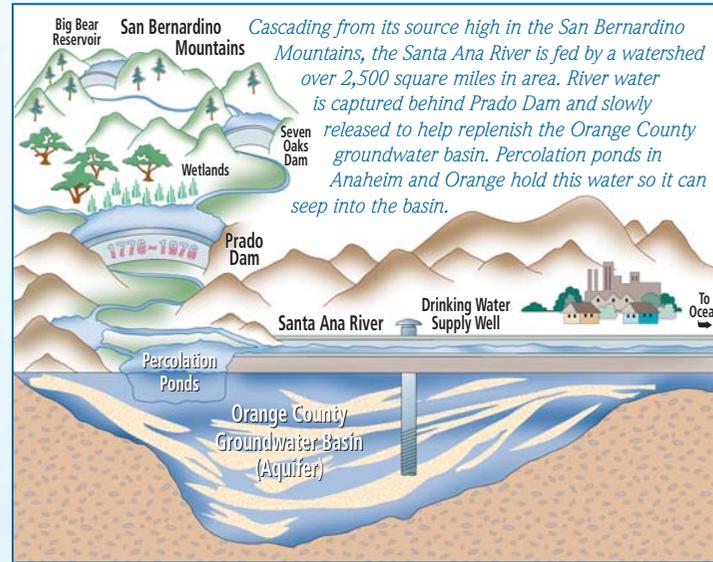
Orange County's Water Future

For years, Orange County has enjoyed an abundant, seemingly endless supply of high-quality water. However, as water demand continues to increase statewide, we must be even more conscientious about our water supply and maximize the efficient use of this precious natural resource.

OCWD and MWD) work cooperatively to evaluate new and innovative water management and supply development programs, including water reuse and recycling, wetlands expansion, recharge facility construction, ocean and brackish water desalination, surface storage and water use efficiency programs. These efforts are helping to enhance long-term countywide water reliability and water quality.



A healthy water future for Orange County rests on finding and developing new water supplies, as well as protecting and improving the quality of the water that we have today. Your local and regional water agencies are committed to making the necessary investments today in new water management projects to ensure an abundant and high-quality water supply for our future.



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.
- ▶ 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.
- ▶ Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production or mining activities.
- ▶ 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.

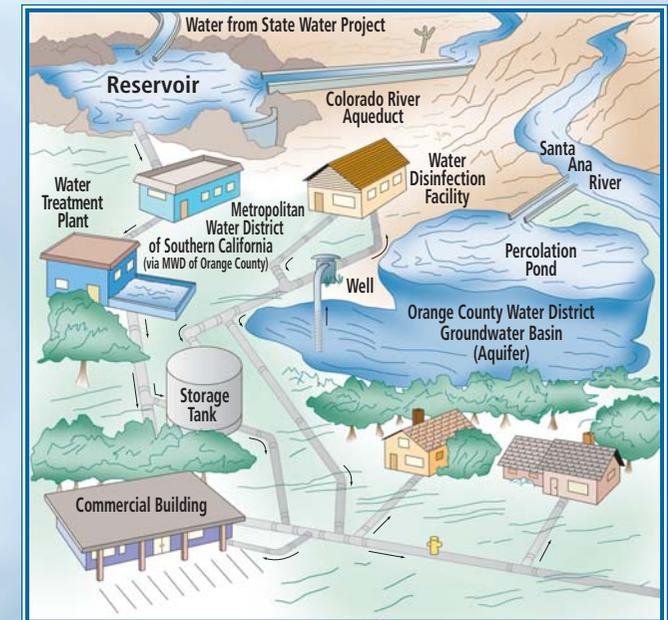
In order to ensure that tap water is safe to drink, USEPA and the CDPH prescribe regulations that limit the amount of certain

contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water 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.

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 2007 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).



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

Drinking Water Fluoridation

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. In December 2007, the Metropolitan Water District of Southern California joined 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 CDPH, as well as the U.S. Centers for Disease Control and Prevention, Metropolitan adjusted the natural fluoride level in imported treated water from the Colorado River and State Project water to the optimal range for dental health of 0.7 to 1.3 parts per million. Our local water is not supplemented with fluoride. Fluoride levels in drinking water are limited under California state regulations at a maximum dosage of 2 parts per million.

There are many places to go for additional information about the fluoridation of drinking water.

U.S. Centers for Disease Control and Prevention

1-800-232-4636

www.cdc.gov/Oralhealth/publications/factsheets/

American Dental Association

www.ada.org/public/topics/fluoride/index.asp

American Water Works Association

www.awwa.org

For more information about Metropolitan's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or at edymally@mwdh2o.com.

Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people,

Water Assessment Reports

Imported (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 Newport Beach Utilities Department was completed in December 2002. The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: Dry cleaners, gas stations, and known contaminant plumes.

A copy of the complete assessment is available at Department of Public Health 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 Newport Beach Utilities Department at (949) 718-3401.

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.

Radon Advisory

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 when released from tap water from showering, washing dishes, and other household activities. Breathing air containing radon can lead to lung cancer. Drinking water containing radon could increase the risk of stomach cancer. Compared to radon entering the home through soil, radon entering the home through your tap water is a small source of radon in indoor air. For the most recent set of samples collected in 2003, the maximum amount of Radon detected in your water was 420 picocuries per liter which is equivalent to 0.04 picocurie per liter of Radon in indoor air of a typical family residence. The USEPA Action Level for radon in indoor air is 4.0 picocuries per liter. If you are concerned about radon in your home, test the air in your home. Fix your home if the level of radon is 4 picocuries per liter of air or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call the State radon program or call USEPA's Radon Hotline (1-800-SOS-RADON).

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; you could also flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the USEPA Safe Drinking Water Hotline (800) 426-4791.



2007 City of Newport Beach Groundwater Quality

| Chemical | MCL | PHG (MCLG) | Average Amount | Range of Detections | MCL Violation? | Most Recent Sampling Date | Typical Source of Contaminant |
|--|---------------|------------|----------------|---------------------|----------------|---------------------------|-------------------------------|
| Radiologicals | | | | | | | |
| Alpha Radiation (pCi/L) | 15 | (0) | 7.5 | ND – 16 | No | 2007 | Erosion of Natural Deposits |
| Uranium (pCi/L) | 20 | 0.43 | 7.8 | 2.7 – 16 | No | 2007 | Erosion of Natural Deposits |
| Inorganic Chemicals | | | | | | | |
| Arsenic (ppb) | 10 | 0.004 | <2 | ND – 2.9 | No | 2007 | Erosion of Natural Deposits |
| Barium (ppm) | 1 | 2 | <0.1 | ND – 0.11 | No | 2007 | Erosion of Natural Deposits |
| Fluoride (ppm) | 2 | 1 | 0.32 | 0.26 – 0.39 | No | 2007 | Erosion of Natural Deposits |
| Nitrate (ppm as NO ₃) | 45 | 45 | 8.2 | ND – 22 | No | 2007 | Fertilizers, Septic Tanks |
| Nitrate+Nitrite (ppm as N) | 10 | 10 | 1.9 | ND – 5.0 | No | 2007 | Fertilizers, Septic Tanks |
| Selenium (ppb) | 50 | (50) | <5 | ND – 6.9 | No | 2007 | Erosion of Natural Deposits |
| Secondary Standards* | | | | | | | |
| Chloride (ppm) | 500* | n/a | 58 | 29 – 92 | No | 2007 | Erosion of Natural Deposits |
| Specific Conductance (µmho/cm) | 1,600* | n/a | 765 | 440 – 1,160 | No | 2007 | Erosion of Natural Deposits |
| Sulfate (ppm) | 500* | n/a | 113 | 39 – 210 | No | 2007 | Erosion of Natural Deposits |
| Total Dissolved Solids (ppm) | 1000* | n/a | 479 | 250 – 730 | No | 2007 | Erosion of Natural Deposits |
| Turbidity (ntu) | 5* | n/a | 0.29 | ND – 1.3 | No | 2007 | Erosion of Natural Deposits |
| Unregulated Contaminants Requiring Monitoring | | | | | | | |
| Alkalinity (ppm as CaCO ₃) | Not Regulated | n/a | 184 | 135 – 228 | n/a | 2007 | Erosion of Natural Deposits |
| Bicarbonate (ppm as HCO ₃) | Not Regulated | n/a | 224 | 165 – 277 | n/a | 2007 | Erosion of Natural Deposits |
| Boron (ppb) | Not Regulated | n/a | 0.11 | 0.11 – 0.12 | n/a | 2007 | Erosion of Natural Deposits |
| Calcium (ppm) | Not Regulated | n/a | 90 | 34 – 152 | n/a | 2007 | Erosion of Natural Deposits |
| Hardness (ppm as CaCO ₃) | Not Regulated | n/a | 287 | 99 – 493 | n/a | 2007 | Erosion of Natural Deposits |
| Magnesium (ppm) | Not Regulated | n/a | 15 | 3.8 – 28 | n/a | 2007 | Erosion of Natural Deposits |
| pH (units) | Not Regulated | n/a | 8.1 | 8.0 – 8.2 | n/a | 2007 | Acidity, hydrogen ions |
| Potassium (ppm) | Not Regulated | n/a | 3.3 | 2.2 – 4.8 | n/a | 2007 | Erosion of Natural Deposits |
| Sodium (ppm) | Not Regulated | n/a | 53 | 50 – 57 | n/a | 2007 | Erosion of Natural Deposits |
| Vanadium (ppb) | Not Regulated | n/a | <3 | ND – 4.2 | n/a | 2007 | 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 = micromhos per centimeter; *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

2007 City of Newport Beach Distribution System Water Quality

| Disinfection Byproducts | MCL (MRDL/MRDLG) | Average Amount | Range of Detections | MCL Violation? | Typical Source of Contaminant |
|------------------------------|------------------|----------------|---------------------|----------------|-------------------------------------|
| Total Trihalomethanes (ppb) | 80 | 52 | 2.4 – 112 | No | Byproducts of chlorine disinfection |
| Haloacetic Acids (ppb) | 60 | 25 | ND – 35 | No | Byproducts of chlorine disinfection |
| Chlorine Residual (ppm) | (4 / 4) | 1.9 | ND – 3.0 | No | Disinfectant added for treatment |
| Aesthetic Quality | | | | | |
| Color (color units) | 15* | <3 | ND – 5 | No | Erosion of natural deposits |
| Odor (threshold odor number) | 3* | 1 | 1 | No | Erosion of natural deposits |
| Turbidity (ntu) | 5* | 0.1 | 0.1-1.5 | No | Erosion of natural deposits |

Twelve locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; thirty locations are tested monthly for color, odor and turbidity; 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.

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 |
|--------------|-------------------|-------------|-----------------------|--------------------------------------|---------------|---------------------------------|
| Copper (ppm) | 1.3 | 0.17 | 0.13 | 0/30 | No | Corrosion of household plumbing |
| Lead (ppb) | 15 | 2 | ND<5 | 0/30 | No | Corrosion of household plumbing |

Every three years, 30 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2006. Lead was detected in 3 homes; none exceeded the regulatory action level. Copper was detected in 24 samples; none exceeded the 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.

2007 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 |
|---|-------------------------|----------------|----------------|---------------------|----------------|---|
| Radiologicals – Tested in 2006 | | | | | | |
| Alpha Radiation (pCi/L) | 15 | (0) | <3 | ND – 7.2 | No | Erosion of natural deposits |
| Beta Radiation (pCi/L) | 50 | (0) | <4 | ND – 6.4 | No | Decay of man-made or natural deposits |
| Inorganic Chemicals – Tested in 2007 | | | | | | |
| Aluminum (ppm) | 1 / 0.2* | 0.6 | 0.08 | ND – 0.1 | No | Treatment process residue, natural deposits |
| Arsenic (ppb) | 10 | 0.004 | <2 | ND – 2.8 | No | Erosion of natural deposits |
| Barium (ppm) | 1 | 2 | <0.1 | ND – 0.1 | No | Erosion of natural deposits |
| Fluoride (ppm) naturally-occurring | 2 | 1 | 0.2 | 0.1 – 0.2 | No | Erosion of natural deposits |
| Fluoride (ppm) treatment-related | Optimal Range 0.7 – 1.3 | | | 0.6 – 0.9 | No | Water additive for dental health |
| Nitrate as N (ppm) | 10 | 10 | 0.5 | ND – 0.7 | No | Agriculture runoff and sewage |
| Perchlorate (ppb) | 6 | 6 | <4 | ND – 4.1 (1) | No | Industrial waste discharge |
| Secondary Standards* – Tested in 2007 | | | | | | |
| Chloride (ppm) | 500* | n/a | 88 | 75 – 101 | No | Runoff or leaching from natural deposits |
| Color (color units) | 15* | n/a | 2 | 1 – 2 | No | Runoff or leaching from natural deposits |
| Odor (odor units) | 3* | n/a | 2 | 2 | No | Naturally-occurring organic materials |
| Specific Conductance (µmho/cm) | 1,600* | n/a | 801 | 674 – 893 | No | Substances that form ions in water |
| Sulfate (ppm) | 500* | n/a | 158 | 122 – 179 | No | Runoff or leaching of natural deposits |
| Total Dissolved Solids (ppm) | 1,000* | n/a | 469 | 394 – 519 | No | Runoff or leaching of natural deposits |
| Turbidity (NTU) | 5* | n/a | 0.04 | 0.03 – 0.05 | No | Runoff or leaching of natural deposits |
| Unregulated Chemicals – Tested in 2007 | | | | | | |
| Alkalinity (ppm) | Not Regulated | n/a | 93 | 82 – 103 | n/a | Runoff or leaching from natural deposits |
| Boron (ppb) | Not Regulated | n/a | 140 | 130 – 150 | n/a | Runoff or leaching from natural deposits |
| Calcium (ppm) | Not Regulated | n/a | 46 | 36 – 55 | n/a | Runoff or leaching from natural deposits |
| Hardness, total (ppm) | Not Regulated | n/a | 201 | 158 – 228 | n/a | Runoff or leaching of natural deposits |
| Hardness, total (grains/gal) | Not Regulated | n/a | 12 | 9.2 – 13 | n/a | Runoff or leaching of natural deposits |
| Magnesium (ppm) | Not Regulated | n/a | 21 | 16 – 23 | n/a | Runoff or leaching from natural deposits |
| pH (pH units) | Not Regulated | n/a | 8.2 | 8.1 – 8.3 | n/a | Hydrogen ion concentration |
| Potassium (ppm) | Not Regulated | n/a | 3.9 | 3.4 – 4.4 | n/a | Runoff or leaching from natural deposits |
| Sodium (ppm) | Not Regulated | n/a | 83 | 73 – 91 | n/a | Runoff or leaching from natural deposits |
| Total Organic Carbon (ppm) | Not Regulated | TT | 2.2 | 1.9 – 2.9 | n/a | Various natural and man-made sources |
| Vanadium (ppb) | Not Regulated | n/a | 3.3 | ND – 3.7 | n/a | Runoff or leaching from natural deposits |

(1) Perchlorate detection is from a USEPA Unregulated Contaminant Monitoring Rule test in 2003. Perchlorate was not detected in treated water samples tested in 2007.

Perchlorate became a regulated chemical in California drinking water in 2007.

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 | 0.3 NTU | 0.05 | 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.

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 research are:

Municipal Water District of Orange County

www.mwdoc.com

Orange County Water District

www.ocwd.com

Metropolitan Water District of Southern California

www.mwdh2o.com

California Department of Public Health,

Division of Drinking Water and Environmental Management

www.cdph.ca.gov/certlic/drinkingwater

U.S. Environmental Protection Agency

www.epa.gov/safewater/

What are Water Quality Standards?

Drinking water standards established by USEPA and CDPH set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The chart in this report shows the following types of water quality standards:

- **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.
- **Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- **Secondary MCLs** are set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **Regulatory Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

How are Contaminants Measured?

Water is sampled and tested throughout the year. Contaminants are measured in:

- parts per million (ppm) or milligrams per liter (mg/l)
- parts per billion (ppb) or micrograms per liter (µg/l)
- parts per trillion (ppt) or nanograms per liter (ng/l)

If this is difficult to imagine, think about these comparisons:

| Parts per million (ppm or mg/L): | Parts per billion (ppb or µg/L): | Parts per trillion (ppt or ng/L) |
|----------------------------------|----------------------------------|--------------------------------------|
| • 3 drops in 42 gallons | • 3 drops in 14,000 gallons | • 10 drops in a Rose Bowl-sized pool |
| • 1 second in 12 days | • 1 second in 32 years | • 1 second in 32,000 years |
| • 1 inch in 16 miles | • 1 inch in 16,000 miles | • 1 inch in 16 million miles |

What is a Water Quality Goal?

In addition to mandatory water quality standards, USEPA and CDPH have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. The chart in this report includes three types of water quality goals:

- **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 USEPA.
- **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 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.