The 2006 Water Quality Report

Drinking Water Quality

Since 1990, California water utilities have provided an annual Water Quality Report to their customers. This year's report covers calendar year 2005 water quality testing, and has been prepared in compliance with regulations called for in the 1996 reauthorization of the Safe Drinking Water Act (SDWA). The re-authorization 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. To ensure that your tap water is safe to drink, USEPA and 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. The federal Food and Drug Administration (FDA) also sets regulations for bottled water.

The East Orange County Water District 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 accordance with the SDWA, the District monitors over 100 compounds in your water supply. This report includes only the compounds actually detected in the water.

In some cases, the District goes beyond what is required to monitor for additional contaminants that 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 in general, please contact Jerry Mendzer at (714) 538-5815.

The Water District Board of Directors meets on the 3rd Thursday of each month at 5:00 p.m. Meetings are held at 185 N. McPherson Road, Orange.

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 تزويدك ماء الشرب في منطقتك. يرجى ترجمته، أو إبحث التقرير مع صديق لك يفهم هذه المعلومات جيدا.

Arabic

这份报告中有些重要的信息，讲到关于您所在社区的水的品质，请您找人翻译一下，或者请能看得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 uebersetzt 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. 이 것을 번역하거나 혼분히 이해하시는 친구와 상의하십시오.

Korean

Este informe contiene información muy importante sobre su agua potable. Para mas información ó traduccion, favor de contactar a Mr. Jerry Mendzer. Telefono: (714) 538-5815

Spanish

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

East Orange County Water District
185 North McPherson Road
Orange, California 92869

2006 Water Quality Report

East Orange County Water District

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

Sources of Supply

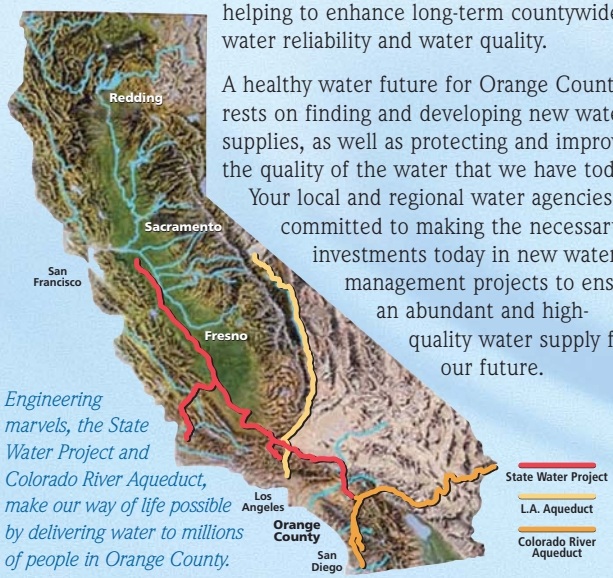
Orange County's water supplies are a blend of groundwater provided by the Orange County Water District (OCWD) and water imported from Northern California and the Colorado River by the Municipal Water District of Orange County (MWDOC) via the Metropolitan Water District of Southern California (MET). Groundwater 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. In south Orange County, nearly 100 percent of the water is imported and delivered to the cities and retail water districts, where it is stored in above-ground reservoirs and tanks before being sent to homes and businesses.

Orange County's Water Future

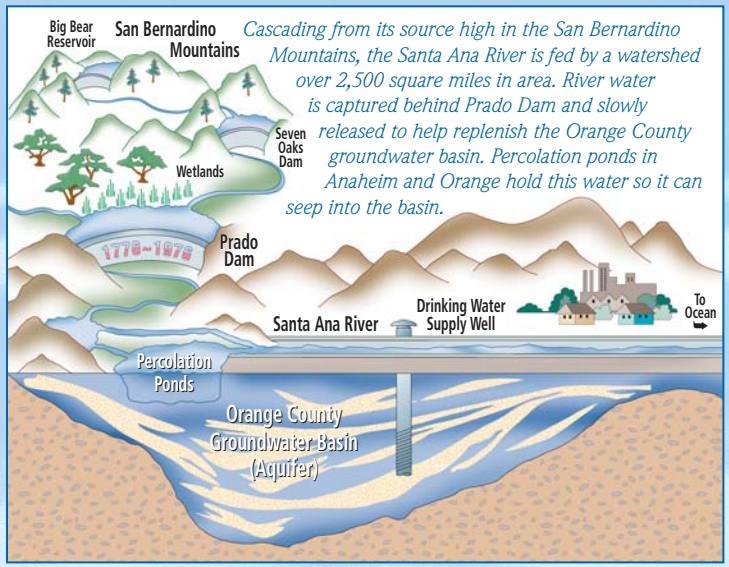
For years, Orange County has enjoyed an abundant, seemingly endless supply of high-quality water. However, as water demand continues to increase statewide, we must be even more conscientious about our water supply and maximize the efficient use of this precious natural resource.

OCWD and MWDOC 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.



Engineering marvels, the State Water Project and Colorado River Aqueduct, make our way of life possible by delivering water to millions of people in Orange County.



Cascading from its source high in the San Bernardino Mountains, the Santa Ana River is fed by a watershed over 2,500 square miles in area. River water is captured behind Prado Dam and slowly released to help replenish the Orange County groundwater basin. Percolation ponds in Anaheim and Orange hold this water so it can seep into the basin.

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:

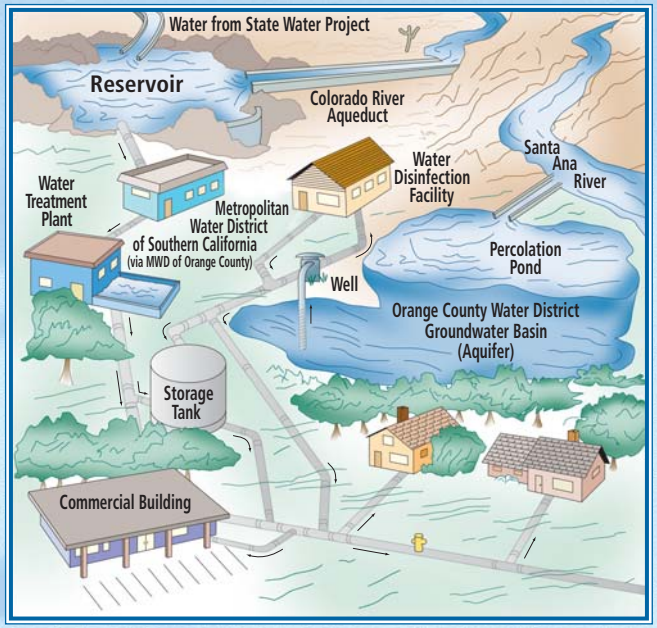
- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic 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 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.

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 treated water for *Cryptosporidium* in 2005 but did not detect it. Any *Cryptosporidium* in Metropolitan's source water 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

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.

Disinfection and Disinfection Byproducts

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases. Chlorine is added to your drinking water at the source of supply (groundwater well or surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This “residual” chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical byproducts, called disinfection byproducts (DBPs), which may pose health risks. A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts. The Safe Drinking Water Act requires the USEPA to develop rules to achieve these goals.

Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine. In 1979, the USEPA set the maximum amount of total THMs allowed in drinking water at 100 parts per billion as an annual running average. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule lowered the total THM maximum annual average level to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water. Your drinking water complies with the Stage 1 Disinfectants / Disinfection Byproducts Rule. In 2003, the USEPA proposed a Stage 2 regulation that will further control allowable levels of DBPs in drinking water without compromising disinfection itself. This regulation was finalized by USEPA in January 2006.

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.

Nitrate

The maximum allowable level of nitrate in drinking water, also called the maximum contaminant level or MCL, is 45 milligrams per liter as nitrate (mg/L as NO_3). The nitrate MCL can also be expressed as 10 milligrams per liter as nitrogen (mg/L as N). Both numbers are equivalent values. At times, nitrate in your tap water may have exceeded one-half the MCL, but it was never greater than the MCL. The following advisory is issued because in 2005 we recorded nitrate measurements in the drinking water supply which exceeded one-half the nitrate MCL.

Nitrate in drinking water at levels above 45 mg/L (or the equivalent 10 mg/L as N) is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant’s blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 parts-per-million may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

Source Water Assessments

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 East Orange County Water District was completed in December 2002. The groundwater sources are considered most vulnerable to the following activities associated with nitrates detected in the water supply: Historic waste dumps/landfills, and past agricultural activities and application of fertilizers. The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: Dry cleaners and gas stations.

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 Jerry Mendzer at the East Orange County Water District, (714) 538-5815.

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

Orange County Water District
www.ocwd.com

Metropolitan Water District of Southern California
www.mwdh2o.com

California Department of Health Services, Division of Drinking Water and Environmental Management
www.dhs.ca.gov/ps/ddwem

U.S. Environmental Protection Agency
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.

2005 East Orange County Water District Groundwater Quality

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
Inorganic Chemicals							
Nitrate (ppm as NO_3)	45	45	22	20 – 23	No	2005	Fertilizers, Septic Tanks
Nitrate+Nitrite (ppm as N)	10	10	5.0	4.5 – 5.3	No	2005	Fertilizers, Septic Tanks
Secondary Standards*							
Chloride (ppm)	500*	n/a	98	98	No	2003	Erosion of Natural Deposits
Color (color units)	15*	n/a	2	ND – 3	No	2003	Erosion of Natural Deposits
Specific Conductance (µmho/cm)	1,600*	n/a	936	932 – 939	No	2003	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	135	134 – 136	No	2003	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	576	573 – 578	No	2003	Erosion of Natural Deposits
Turbidity (ntu)	5*	n/a	0.5	0.3 – 0.7	No	2003	Erosion of Natural Deposits
Unregulated Contaminants Requiring Monitoring							
Bicarbonate (ppm)	Not Regulated	n/a	219	217 – 220	n/a	2003	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	100	96 – 106	n/a	2003	Erosion of Natural Deposits
Dichlorodifluoromethane (ppb)	Not Regulated	n/a	0.6	ND – 0.9	n/a	2005	Discharge from Industrial Source
Magnesium (ppm)	Not Regulated	n/a	24	24 – 25	n/a	2003	Erosion of Natural Deposits
pH (pH units)	Not Regulated	n/a	7.9	7.9 – 8.0	n/a	2003	Acidity, hydrogen ions
Potassium (ppm)	Not Regulated	n/a	1.9	1.6 – 2.2	n/a	2003	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	57	54 – 59	n/a	2003	Erosion of Natural Deposits
Total Alkalinity (ppm as $CaCO_3$)	Not Regulated	n/a	179	178 – 180	n/a	2003	Erosion of Natural Deposits
Total Hardness (ppm as $CaCO_3$)	Not Regulated	n/a	350	342 – 365	n/a	2003	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;
MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal; < = less than the detection limit for reporting purposes;
µmho/cm = micromho per centimeter; *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

2005 East Orange County Water District Distribution System Water Quality

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	30	4 – 55	No	Byproducts of chlorine disinfection
Haloacetic Acids (ppb)	60	27	2 – 32	No	Byproducts of chlorine disinfection
Chlorine Residual (ppm)	(4 / 4)	1.1	ND – 2.3	No	Disinfectant added for treatment
Aesthetic Quality					
Turbidity (ntu)	5*	0.1	ND – 0.12	No	Erosion of natural deposits

Two locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; one location is 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
Color and odor were not detected in any sample. *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

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	13	1 / 20	No	Corrosion of household plumbing
Copper (ppm)	1.3	0.17	0.16	0 / 20	No	Corrosion of household plumbing

Twenty residences were tested for lead and copper at-the-tap during 2003. Lead was detected in four samples; one sample exceeded the action level.
Copper was detected in all samples but never exceeded the action level. The regulatory action level is the concentration of lead or copper which, if exceeded in more than ten percent of the homes tested, triggers treatment or other requirements that a water system must follow.

2005 Metropolitan Water District of Southern California Treated Surface Water

Chemical	PHG, or MCL	Average (MCLG)	Range of Amount	MCL Detections	Violation?	Typical Source of Contaminant
Radiologicals – Tested in 2005						
Alpha Radiation (pCi/L)	15	(0)	<3	ND – 3.2	No	Decay of man-made or natural deposits
Beta Radiation (pCi/L)	50	(0)	4.8	ND – 6.4	No	Erosion of natural deposits
Inorganic Chemicals – Tested in 2005						
Aluminum (ppm)	1 / 0.2*	0.6	<0.05	ND – 0.1	No	Erosion of natural deposits
Barium (ppm)	1	2	<0.1	ND – 0.1	No	Erosion of natural deposits
Fluoride (ppm)	2	1	0.19	0.15 – 0.22	No	Erosion of natural deposits
Nitrate as NO_3 (ppm)	45	45	2.3	ND – 3.6	No	Agriculture runoff and sewage
Nitrate and Nitrite as N (ppm)	10	10	0.5	ND – 0.8	No	Agriculture runoff and sewage
Secondary Standards* – Tested in 2005						
Chloride (ppm)	500*	n/a	77	67 – 85	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	0.27	0.15 – 0.39	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	792	734 – 871	No	Substances that form ions in water
Sulfate (ppm)	500*	n/a	171	151- 202	No	Runoff or leaching of natural deposits
Total Dissolved Solids (ppm)	1,000*	n/a	468	426 – 528	No	Runoff or leaching of natural deposits
Turbidity (NTU)	5*	n/a	0.06	0.05 – 0.07	No	Runoff or leaching of natural deposits
Unregulated Chemicals – Tested in 2005						
Alkalinity (ppm)	Not Regulated	n/a	91	83 – 101	n/a	Runoff or leaching from natural deposits
Boron (ppb)	Not Regulated	n/a	160	130 – 200	n/a	Runoff or leaching from natural deposits
Calcium (ppm)	Not Regulated	n/a	45	39 – 53	n/a	Runoff or leaching from natural deposits
Hardness, total (ppm)	Not Regulated	n/a	197	176 – 225	n/a	Runoff or leaching of natural deposits
Hardness, total (grains/gal)	Not Regulated	n/a	12	10 – 13	n/a	Runoff or leaching of natural deposits
Magnesium (ppm)	Not Regulated	n/a	21	19 – 23	n/a	Runoff or leaching from natural deposits
N-Nitrosodimethylamine (ppt)	Not Regulated	n/a	<2	ND – 2.2	n/a	By-product of drinking water chlorination
pH (pH units)	Not Regulated	n/a	8.2	8.1 – 8.2	n/a	Hydrogen ion concentration
Potassium (ppm)	Not Regulated	n/a	3.8	3.5 – 4.1	n/a	Runoff or leaching from natural deposits
Sodium (ppm)	Not Regulated	n/a	82	73 – 90	n/a	Runoff or leaching from natural deposits
Vanadium (ppb)	Not Regulated	n/a	3.3	3.2 – 3.4	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	0.06	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.”
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.