

City of
**San Juan
Capistrano**
Utilities Department



**2012
Water Quality
Report**



Your 2012 Water Quality Report

Drinking Water Quality

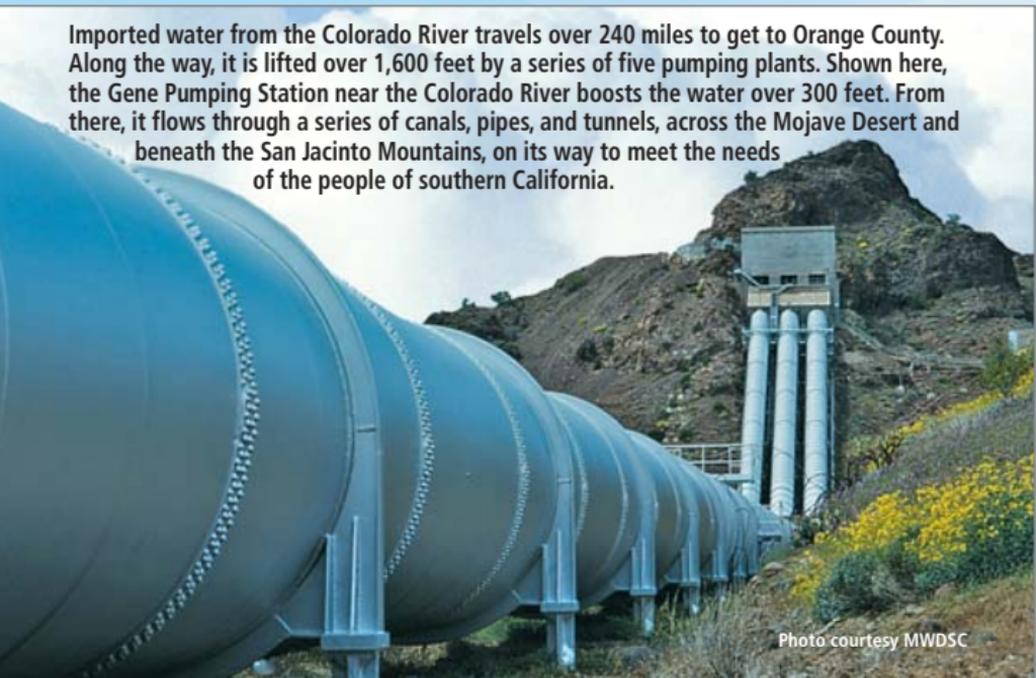
Since 1990, California public water utilities have been providing an annual Water Quality Report to their customers. This year's report covers calendar year 2011 drinking water quality testing and reporting. Your City of San Juan Capistrano Utilities Department (City) vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets the quality standards required by federal and state regulatory agencies. The U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) are the agencies responsible for establishing and enforcing drinking water quality standards.

In some cases, the City goes beyond what is required by testing for unregulated chemicals that may have known health risks but do not have drinking water standards. For example, the City, which produces and treats local groundwater, and the Metropolitan Water District of Southern California (MWDSC), which supplies treated imported surface water to the City, test for unregulated chemicals in our water supply. Unregulated chemical monitoring helps USEPA and CDPH determine where certain chemicals occur and whether new standards need to be established for those chemicals to protect public health.

Through drinking water quality testing programs carried out by the City for local groundwater, treated groundwater and in its drinking water distribution system, and MWDSC for treated surface water, your drinking water is constantly monitored from source to tap for regulated and unregulated constituents.

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.

Imported water from the Colorado River travels over 240 miles to get to Orange County. Along the way, it is lifted over 1,600 feet by a series of five pumping plants. Shown here, the Gene Pumping Station near the Colorado River boosts the water over 300 feet. From there, it flows through a series of canals, pipes, and tunnels, across the Mojave Desert and beneath the San Jacinto Mountains, on its way to meet the needs of the people of southern California.



We Go to Great Lengths to Ensure the Continued Quality of Your Water

Sources of Supply

The City receives its water from three sources. Water is purchased from MWDSC. MWDSC's imported water sources are a blend of State Water Project water from northern California, and water from the Colorado River Aqueduct. Furthermore, the City is supplied with treated water from the Ground Water Recovery Plant and two potable production wells located in the Northern portion of the City.

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.



Questions about your water?

Contact us for answers.

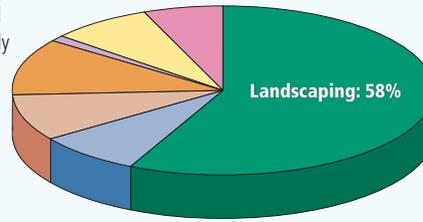
For information about this report, or your water quality information in general, please contact the City of San Juan Capistrano, Utilities Department, Customer Service at (949) 493-1515.

The City of San Juan Capistrano Utilities Commission meets the third Tuesday of every month at 8:00 am and is open to the public. The City Council meets the first and third Tuesday of every month at 7:00 pm and is open to the public. Meetings are held in the City of San Juan Capistrano Council chambers located at 32400 Paseo Adelanto, San Juan Capistrano. Please feel free to participate in these meetings.

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

How Residential Water is Used in Orange County

Outdoor watering of lawns and gardens makes up approximately 60% of home water use. By cutting your outdoor watering by 1 or 2 days a week, you can dramatically reduce your overall water use.

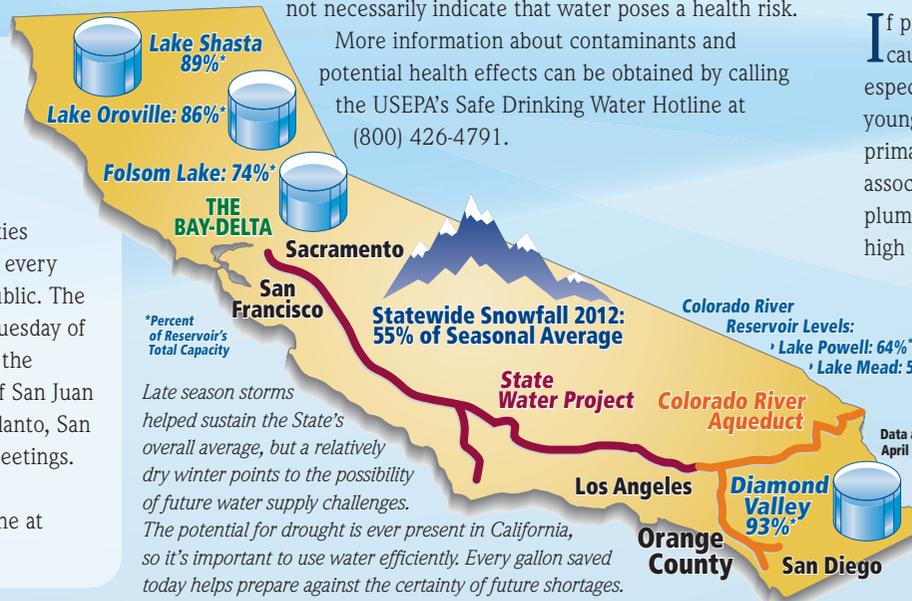


Visit www.bewaterwise.com for water saving tips and ideas for your home and business.

- 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 stormwater 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 stormwater 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. MWDSC tested their source water and treated surface water for *Cryptosporidium* in 2011 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 10 a.m. and 4 p.m. Eastern Time (7 a.m. to 1 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.

About Lead in Tap Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at: www.epa.gov/safewater/lead.



Information You Should Know About the Quality of Your Drinking Water

Disinfectants 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.

Stage 2 of the regulation was finalized by USEPA in 2006, which further controls allowable levels of DBPs in drinking water without compromising disinfection itself. A required distribution system evaluation was completed in 2008 and a Stage 2 monitoring plan has been approved by CDPH. Full Stage 2 compliance begins in 2012.

Want Additional Information?

There’s a wealth of information on the internet about Drinking Water Quality and water issues in general. A good place to begin your own research is the **City of San Juan Capistrano** website:

www.sanjuancapistrano.org.

In addition to extensive information about your local water and the support and services we offer, you’ll find links for many other local, statewide, and national resources.

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 highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **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)

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 drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **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.

2011 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 2011						
Alpha Radiation (pCi/L)	15	(0)	3	ND – 3	No	Erosion of Natural Deposits
Beta Radiation (pCi/L)	50	(0)	<4	ND – 4	No	Decay of Man-made or Natural Deposits
Uranium (pCi/l)	20	0.43	2	2	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2011						
Aluminum (ppm)	1	0.6	0.14	ND – 0.24	No	Treatment Process Residue, Natural Deposits
Fluoride (ppm) treatment-related	Control Range 0.7 – 1.3 ppm Optimal Level 0.8 ppm		0.8	0.5 – 1.0	No	Water Additive for Dental Health
Nitrate as NO ₃ (ppm)	45	45	<2	ND – 2	No	Agriculture Runoff and Sewage
Nitrate + Nitrite as N (ppm)	10	10	< 0.4	ND – 0.4	No	Agriculture Runoff and Sewage
Secondary Standards* – Tested in 2011						
Aluminum (ppb)	200*	600	140	ND – 240	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	72	70 – 75	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	1	1	No	Runoff or Leaching from Natural Deposits
Odor (threshold odor number)	3*	n/a	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	690	320 – 960	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	160	150 – 170	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	470	440 – 490	No	Runoff or Leaching from Natural Deposits
Turbidity (ntu)	5*	n/a	0.05	0.03 – 0.25	No	Soil Runoff
Unregulated Chemicals – Tested in 2011						
Alkalinity, total as CaCO ₃ (ppm)	Not Regulated	n/a	90	48 – 120	n/a	Runoff or Leaching from Natural Deposits
Boron (ppb)	NL = 1,000	n/a	130	130	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	51	47 – 55	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as CaCO ₃ (ppm)	Not Regulated	n/a	190	57 – 270	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gal)	Not Regulated	n/a	11	3 – 16	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	20	19 – 21	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.0	7.0 – 8.6	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	3.8	3.6 – 4.0	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	72	67 – 77	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	Not Regulated	TT	2.4	1.7 – 3.0	n/a	Various Natural and Man-made Sources

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; NL = Notification Level; n/a = not applicable; TT = treatment technique * Contaminant is regulated by a secondary standard.

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

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.

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 MWDCSC 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, MWDCSC 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

www.cdc.gov/fluoridation/

California Department of Public Health

www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx

American Water Works Association

www.awwa.org

For more information about MWDCSC's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or at edymally@mwwdh2o.com.



2011 City of San Juan Capistrano Groundwater Quality

Chemical	MCL	PHG (MCLG)	Average Amount SJC Wells	Average Amount SJBA Treated Wells	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
Radiologicals								
Alpha Radiation (pCi/L)	15	(0)	6.9	8.2	ND – 14	No	2010/11	Erosion of Natural Deposits
Combined Radium (pCi/l)	5	(0)	ND	<1	ND – 1.1	No	2010	Erosion of Natural Deposits
Uranium (pCi/L)	20	0.43	5.2	5.8	3.6 – 7.5	No	2010	Erosion of Natural Deposits
Inorganic Chemicals								
Arsenic (ppb)	10	0.004	ND	ND	ND – 4.3	No	2011	Erosion of Natural Deposits
Fluoride (ppm)	2	1	0.28	0.16	ND – 0.63	No	2011	Erosion of Natural Deposits
Nitrate (ppm as NO ₃)	45	45	12	ND	ND – 12	No	2011	Fertilizers, Septic Tanks
Nitrate + Nitrite (ppm as N)	10	10	2.7	ND	ND – 2.7	No	2011	Fertilizers, Septic Tanks
Secondary Standards*								
Chloride (ppm)	500*	n/a	170	90	31 – 180	No	2011	Erosion of Natural Deposits
Color (color units)	15*	n/a	3.7	ND	ND – 5	No	2011	Erosion of Natural Deposits
Iron (ppb)	300*	n/a	ND	ND	ND – 2	No	2011	Erosion of Natural Deposits
Odor (Threshold Odor Number)	3*	n/a	2	ND	ND – 5	No	2011	Natural Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	1,400	610	190 – 1,500	No	2011	Substances Form Ions in Water
Sulfate (ppm)	500*	n/a	270	72	30 – 330	No	2011	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	1,000	360	120 – 1,100	No	2011	Erosion of Natural Deposits
Turbidity (ntu)	5*	n/a	1.5	0.12	ND – 10	No	2011	Erosion of Natural Deposits
Unregulated Contaminants Requiring Monitoring								
Alkalinity, total (ppm as CaCO ₃)	Not Regulated	n/a	300	100	64 – 340	n/a	2011	Erosion of Natural Deposits
Boron (ppb)	Not Regulated	n/a	130	ND	ND – 130	n/a	2011	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	170	32	ND – 240	n/a	2011	Erosion of Natural Deposits
Hardness, total (ppm as CaCO ₃)	Not Regulated	n/a	590	150	32 – 850	n/a	2011	Erosion of Natural Deposits
Hardness, total (grains per gallon)	Not Regulated	n/a	34	9	1.4 – 36	n/a	2011	Erosion of Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	37	12	3 – 63	n/a	2011	Erosion of Natural Deposits
pH (pH units)	Not Regulated	n/a	7.0	7.5	6.9 – 8.2	n/a	2011	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	2.0	1.7	1 – 5	n/a	2011	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	96	110	53 – 130	n/a	2011	Erosion of Natural Deposits
Vanadium (ppb)	Not Regulated	n/a	<3	ND	ND – 5.8	n/a	2011	Erosion of Natural Deposits

SJC = San Juan Capistrano; SJBA = San Juan Basin Authority; 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).

2011 City of San Juan Capistrano Distribution System Water Quality

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	32	4 – 52	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	15	1.1 – 27	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4 / 4)	1.7	0.8 – 2.2	No	Disinfectant Added for Treatment
Aesthetic Quality					
Color (color units)	15*	0.4	ND – 2	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	0.1	ND – 1	No	Erosion of Natural Deposits
Turbidity (ntu)	5*	0.1	ND – 0.3	No	Erosion of Natural Deposits

Eight locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; three 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 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	1	0 / 30	No	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.20	0 / 30	No	Corrosion of Household Plumbing

Every three years, selected residences are tested for lead and copper at-the-tap. The most recent set of thirty samples was collected in 2011.

Lead was detected in 5 homes and copper was detected in 28 homes, none of which exceeded the lead or copper regulatory Action Level (AL).

A regulatory Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Source Water Assessments

Imported (MWDCSC) Water Assessment

Every five years, MWDCSC is required by CDPH to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters.

MWDCSC has submitted to CDPH its 2010 updates to the Watershed Sanitary Surveys for the Colorado River and State Water Project, which include suggestions for how to better protect these source waters. Both source waters are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires, and other watershed-related factors that could affect water quality.

Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed, and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation, and wastewater.

USEPA also requires MWDCSC to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDCSC completed its SWA in December 2002. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWDCSC at (213) 217-6850.

Groundwater Assessment

A copy of the assessment of the drinking water sources for the City completed in March 2001 is available at Department of Public Health District Office, Public Water Supply Branch, 28 Civic Center Drive, Room 325, Santa Ana, California 92701 or the City of San Juan Capistrano – Water Division office, 32400 Paseo Adelanto, San Juan Capistrano, California 92675.

This report contains important information
about your drinking water.

Translate it,
or speak with someone
who understands it.



Este informe contiene información
muy importante sobre su agua potable.

Tradúzcalo o hable con alguien
que lo entienda bien.



City of San Juan Capistrano
Utilities Department

32450 Paseo Adelanto

San Juan Capistrano, California 92675