SAN CLEMENTE | 2016 REPORT

PUBLISHED BY THE CITY OF SAN CLEMENTE'S UTILITIES DIVISION

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 2015 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.

The City of San Clemente 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 goes beyond what is required by testing for unregulated contaminants that may have known health risks.

SOURCES OF SUPPLY

Your drinking water is a blend of surface water imported by the Metropolitan Water District of Southern California and groundwater. Metropolitan's imported water source is the Colorado River.



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

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 water 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 State Water Resources Control Board, Division of Drinking Water (DDW) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DDW 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 2015 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).

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. Para mas información ó traducción, favor de contactar a Mr. Kevin Lussier, [949] 366-1553.

IMMUNO-COMPROMISED

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, have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk. These people should seek advice about drinking water from their health care providers.

LEAD IN TAP WATER

If present, elevated levels of lead can cause serious 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 of San Clemente 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. If you are concerned about lead in your water, you may wish to have your water tested. Information on 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.

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 (MWD-SC) 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 DDW, and the U.S. Centers for Disease Control and Prevention, MWDSC 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 0.6 to 1.2 parts per million. 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

cdc.gov/Oralhealth/publications/factsheets

Please share this information with others who may not have received this notice directly (apartments, nursing homes, schools, and businesses).

You can do this by posting this notice in a public place or distributing copies by hand or mail.

2015 CITY OF SAN CLEMENTE DISTRIBUTION SYSTEM WATER OUALITY

Chemical	MCL	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant		
DISINFECTION BYPRODUCTS & DISINFECTANT RESIDUAL							
Total Trihalomethanes (ppb)	80	44	21-69	No	Byproducts of Chlorine Disinfection		
Haloacetic Acids (ppb)	60	18	2.5-29	No	Byproducts of Chlorine Disinfection		
Chlorine Residual (ppm)	(4/4)	1.6	0.2-2.2	No	Disinfectant Added for Treatment		
AESTHETIC QUALITY							
Color (color units)	15*	1	1	No	Erosion of Natural Deposits		
Odor (threshold odor number)	3*	1	1	No	Erosion of Natural Deposits		
Turbidity (ntu)	5*	0.9	0.017-1.79	No	Erosion of Natural Deposits		
OTHERS							
Fluorido (nom)	2	1	0.5-1.4	No	Erosion of Natural Deposits; Water		
Fluoride (ppm)) 2 1 0.5-1.4 NO		INO	Additive for Dental Health			
pH (pH units)	NR	7.74	7.09-8.38	No	Hydrogen Ion Concentration		

Four locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; twenty locations are tested monthly for color, odor and turbidity. *Chemical is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

LEAD & COPPER ACTION LEVELS AT RESIDENTIAL TAPS

Chemical	Action Level (AL)	Public Health Goal		Site Exceeding AL / # of sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	<5 DLR	0/30	No	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.3	0.12	0/30	No	Corrosion of Household Plumbing

In 2013, 30 residences were tested for lead and copper at-the-tap. Lead was not detected in any of the samples. Copper was detected in 29 of 30 samples. None of the samples exceeded the 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. **DLR** = Detection Limit for Purposes of Reporting.

UNREGULATED CHEMICALS DISTRIBUTION SYSTEM

Chemical	Notification Level	Public Health Goal	Average Amount	Range of Detections	Most Recent Sampling Date
Chlorate (ppb)	800	n/a	56	41-71	2015
Chromium, Hexavalent (ppb)**	MCL = 10	0.02	0.083	0.043-0.24	2015
Chromium, Total (ppb)***	MCL = 50	MCLG=100	0.14	ND - 0.51	2015
Molybdenum, Total (ppb)	n/a	n/a	5.3	4.1-7.8	2015
Strontium, Total (ppb)	n/a	n/a	950	680-1200	2015
Vandium, Total (ppb)	50	n/a	2.1	0.7-3	2015

**Hexavalent chromium is regulated with an MCL of 10 ppb but was not detected, based on the detection limit for purposes of reporting of 1 ppb. Hexavalent chromium was included as part of the unregulated chemicals requiring monitoring.

*** Total chromium is regulated with an MCL of 50 ppb but was not detected, based on the detection limit for purposes of reporting of 10 ppb. Total chromium was included as part of the unregulated chemicals requiring monitoring.

American Dental Association

cada.org/en/public-programs/advocatingfor-the-public/fluoride-and-fluoridation

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.

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 the risks of microbial waterborne diseases. Chlorine is added to 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

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 Utilities Operations Supervisor Kevin Lussier, at [949] 366-1553.

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.

For further information about the City, please visit our website: www.san-clemente.org

Drinking Water Act requires the U.S. Environmental Protection Agency (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. 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 full Stage 2 compliance began in 2012.

SOURCE WATER ASSESSMENT

IMPORTED (METROPOLITAN)

WATER ASSESSMENT

Every five years, MWDSC is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters. In 2012 MWDSC submitted to DDW its updated 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 Metropolitan to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDSC completed its SWA in December 2012. 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 MWDSC at (213) 217-6000.

2015 METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA TREATED SURFACE WATER

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant				
RADIOLOGICALS • TESTED IN 2014										
Alpha Radiation (pCi/L)	15	(0)	ND	ND - 4	No	Erosion of Natural Deposits				
Beta Radiation (pCi/L)	50	(0)	5	4 - 6	No	Decay of Man-made or Natural Deposits				
Uranium (pCi/I)	20	0.43	3	2-3	No	Erosion of Natural Deposits				
INORGANIC CHEMICALS • TESTED IN 2015										
Aluminum (ppm)	1	0.6	0.16	0.073-0.24	No	Treatment Process Residue, Natural Deposits				
Arsenic	10	0.004	2.3	2.3	No	Production Wastes, Natural Deposits				
Barium (ppm)	1	2	0.125	0.125	No	Refinery Discharge, Erosion of Natural Deposits				
Fluoride (ppm) treatment-related	0.6- 1 Optim	I Range .2 ppm al Level ppm	0.8	0.6-1	No	Water Additive for Dental Health				
SECONDARY STANDARDS*	• TES	STED IN	2015							
Aluminum (ppb)	200*	600	155	73-240	No	Treatment Process Residue, Natural Deposits				
Chloride (ppm)	500*	n/a	100	98-101	No	Runoff or Leaching from Natural Deposits				
Color (color units)	15*	n/a	1	1	No	Naturally-occurring Organic Materials				
Odor (threshold odor number)	3*	n/a	2	2	No	Naturally-occurring Organic Materials				
Specific Conductance (µmho/cm)	1600*	n/a	1040	1040	No	Substances that form lons in Water				
Sulfate (ppm)	500*	n/a	257	253-261	No	Runoff or Leaching from Natural Deposits				
Total Dissolved Solids (ppm)	1000*	n/a	663	660-665	No	Runoff or Leaching from Natural Deposits				
UNREGULATED CHEMICAL	S · TE	STED I	N 2015							
Alkalinity, total as CaCO3 (ppm)	NR	n/a	126	120 - 131	n/a	Runoff or Leaching from Natural Deposits				
Boron (ppm)	NL=1	n/a	0.12	0.12	n/a	Runoff or Leaching from Natural Deposits				
Calcium (ppm)	NR	n/a	78	76-80	n/a	Runoff or Leaching from Natural Deposits				
Hardness, total as CaCO3 (ppm)	NR	n/a	303	300 - 306	n/a	Runoff or Leaching from Natural Deposits				
Hardness, total (grains/gal)	NR	n/a	18	18	n/a	Runoff or Leaching from Natural Deposits				
Magnesium (ppm)	NR	n/a	27	26-27	n/a	Runoff or Leaching from Natural Deposits				
pH (pH units)	NR	n/a	8.1	8.1	n/a	Hydrogen Ion Concentration				
Potassium (ppm)	NR	n/a	4.9	4.8-5	n/a	Runoff or Leaching from Natural Deposits				
Sodium (ppm)	NR	n/a	101	98 - 104	n/a	Runoff or Leaching from Natural Deposits				
Total Organic Carbon (ppm)	TT	n/a	2.6	2.3 - 2.7	n/a	Various Natural and Man-made sources				

ppb = parts-per-billion; ppm = parts-per-million; pCiL = picoCuries per liter; µmho/cm = microhos per centimeter; ND = not detected; MCL = Maximum Containment Level; (MCLG) = Federal MCL Goal; PHG = Calfornia Public Health Goal; NL = Notification Level; n/a = not applicable; TT = treatment technique; *Contaminant is regulated by a secondary standard.

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Metro. Water District Diemer Filtration Plant	Technique	Measurements	Violation?	Typical Source of Chemical
1) Highest single turbidity measurement	0.3 NTU	0.04	No	Soil Runoff
2) Percentage of samples < 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. NTU = nephelometric turbidity units.

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date				
UNREGULATED CHEMICALS REQUIRING MONITORING									
Chlorate (ppb)	800	n/a	160	42 - 300	2014				
Chronium, Hexavalent (ppb) **	MCL = 10	0.02	0.042	0.035 - 0.053	2014				
Molybdenum, Total (ppb)	n/a	n/a	4.4	4.1 - 4.7	2014				
Strontium, Total (ppb)	n/a	n/a	1000	970 - 1100	2014				
Vanadium, Total (ppb)	50	n/a	2.6	2.2 - 3.1	2014				

**Hexavalent chromium is regulated with an MCL of 10 ppb but was not detected, based on the detection limit for purposes of reporting of 1 ppb. Hexavalent chromium was included as part of the unregulated chemicals requiring monitoring.

GROUNDWATER

ASSESSMENT The City of San Clemente Utilities Division completed an assessment of drinking water sources for its water supply in October 2001 and again in 2008. The City's wells are considered vulnerable to the following Possible Contamination Activities (PCAs) associated with some contaminants detected in the water supply: Maintenance yards, aboveground fuel tanks, an historic dump site, an electrical switching station, and a site for temporary deposition of street sweeper debris. Residences, parks, sewers, roads and storm drains represent additional PCAs. While PCAs exist within the source water assessment area, the water sources are protected from immediate contamination threats by the confining nature of the aquifer, and the significant depth of well perforations at each water source. Copies of each water assessment are located at the City of San Clemente Utilities Division administration office, 380 Avenida Pico, Building N. San Clemente, California. You may inspect these water source assessments by contacting the Utilities Manager at (949) 366-1553.

2015 CITY OF SAN CLEMENTE GROUNDWATER OUALITY

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Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling	Typical Source of Contaminant			
RADIOLOGICALS										
Beta Radiation (pCi/L)	50	(0)	4.1	4.1	No	2010	Decay of Man-made or Natural Deposits			
Gross Radiation (pCi/L)	15	(O)	<3	ND-4.3	No	2010	Decay of Man-made or Natural Deposits			
Combined Radium (pCi/L)	5	(0)	<1	ND - 1.1	No	2010	Erosion of Natural Deposits			
INORGANIC CHEMICALS										
Flouride (ppm)	2	1	0.7	0.44-0.93	No	2015	Erosion of Natural Deposits			
Nitrate (ppm as N)	10	10	2.1	2.1	No	2015	Fertilizers, Septic Tanks			
Nitrate+Nitrate (ppm as N)	10	10	2.1	2.1	No	2015	Fertilizers, Septic Tanks			
SECONDARY STANDARDS	*									
Chloride (ppm) - treated	500*	n/a	175	91-260	No	2015	Erosion of Natural Deposits			
Color (color units)	15*	n/a	2	2	No	2014	Erosion of Natural Deposits			
Manganese (ppb) - treated	50*	n/a	14	0-28	No	2015	Erosion of Natural Deposits			
Odor (threshold odor number)	3*	n/a	1	1	No	2014	Erosion of Natural Deposits			
Specific Conductance (µmho/cm)	1600*	n/a	1050	1050	No	2014	Erosion of Natural Deposits			
Sulfate (ppm)	500*	n/a	190	190	No	2014	Erosion of Natural Deposits			
Total Dissolved Solids (ppm)	1000*	n/a	703	500-905	No	2015	Erosion of Natural Deposits			
Turbidity (ntu) - treated	5*	n/a	0.32	0.24-0.39	No	2015	Erosion of Natural Deposits			
Zinc	5*	n/a	0.1	0.1	No	2014	Erosion of Natural Deposits			
UNREGULATED CHEMICA	LS									
Bicarbonate (ppm)	NR	n/a	168	168	n/a	2014	Erosion of Natural Deposits			
Calcium (ppm)	NR	n/a	72	72	n/a	2014	Erosion of Natural Deposits			
Aggressive Index	NR	n/a	12.2	12.2	n/a	2014	Erosion of Natural Deposits			
Magnesium (ppm)	NR	n/a	38	38	n/a	2014	Erosion of Natural Deposits			
pH (pH units) - treated	NR	n/a	6.9	6.7-7.0	n/a	2015	Hydrogen Ion Concentration			
Potassium (ppm)	NR	n/a	4.2	4.2	n/a	2009	Erosion of Natural Deposits			
Sodium (ppm)	NR	n/a	94	94	n/a	2014	Erosion of Natural Deposits			
Total Alkalinity (ppm as CaCO3)	NR	n/a	168	168	n/a	2014	Erosion of Natural Deposits			
Total Hardness (ppm as CaCO3)	NR	n/a	335	226-445	n/a	2015	Erosion of Natural Deposits			

ppb = parts-per-billion; ppm = parts-per-million; pCiL = picoCuries per liter; ntu = nephelometric turbidity units; $\mu mho/cm$ = microhos per centimeter; ND = not detected; NR = not regulated; 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; *Chemical is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

UNREGULATED CHEMICALS REQUIRING MONITORING

Chemical	Notification Level	PHG	Average Amount	Range of Detection	Most Recent Sampling Date		
Chromium, Hexavalent (ppb)	n/a	0.02	0.025	0-0.049	2015		
Molybdenum, Total (ppb)	n/a	n/a	7.4	7.1-7.6	2015		
Strontium, Total (ppb)	n/a	n/a	460	440-470	2015		
** Hexavalent chromium is regulated with an MCL of 10 ppb but was not detected, based on the detection limit for purposes of							

reporting of 1 ppb. Hexavalent chromium was included as part of the unregulated chemicals requiring monitoring

WHAT ARE WATER QUALITY

STANDARDS?

Drinking water standards established by USEPA and DDW 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
- Primary Drinking Water Standard: MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- ed, triggers treatment or other require- Environmental Protection Agency.

ments that a water system must follow. WHAT IS A WATER QUALITY GOAL?

In addition to mandatory water quality standards, USEPA and DDW 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 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 disinfectants to control microbial contaminants.

Public Health Goal (PHG): The level of a contaminant in drinking water below • Regulatory Action Level (AL): The concen- which there is no known or expected risk tration of a contaminant, which, if exceed- to health. PHGs are set by the California

WANT ADDITIONAL INFORMATION?

City of San Clemente www.san-clemente.org

Municipal Water District of OC www.mwdoc.com

Orange County Water District www.ocwd.com

Metropolitan Water District of **Southern California** www.mwdh2o.com

State Water Resources Control Board, Division of Drinking

www.waterboards.ca.gov/ drinking_water/certlic/ drinkingwater

U.S. Environmental Protection Agency

www.epa.gov

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 and equivalencies:

Parts per million (ppm or mg/L):

- 3 drops of liquid in 42 gallons
- 1 second in 12 days
- 1 inch in 16 miles

Parts per billion (ppb or µg/L):

- 3 drops of liquid in 14,000 gallons
- 1 second in 32 days
- 1 inch in 16,000 miles

Parts per trillion (ppt or ng/L):

- 10 drops of liquid in a Rose Bowl sized pool
- 1 second in 32,000 days
- 1 inch in 16 million miles

CITY OF SAN CLEMENTE | UTILITIES DIVISION

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