

Letter from the General Manager

Moulton Niguel Water District (MNWD) is pleased to report that once again, through safe and effective treatment, the drinking water provided by the District meets or exceeds the standards required by state and federal regulatory agencies. MNWD is committed to providing our customers with high quality water and excellent customer service, while offering you with one of the lowest rates in South Orange County.

The United States Environmental Protection Agency (EPA) and the California Department of Public Health (CDPH) are the agencies responsible for establishing drinking water quality standards. In order to ensure that tap water is safe to drink, the EPA and CDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

The following information is a review of water quality for calendar year 2012. Included are details about where your water comes from, what it contains, and how it compares to state standards. We are committed to providing you with factual information because informed customers are our best customers.

If you have any questions, please contact our Outreach Department at (949) 448-4013, or email us at outreach@mnwd.com.

Sincerely,
MOULTON NIGUEL WATER DISTRICT



Joone Lopez
General Manager



Sources of Water Supply



Your drinking water is surface water imported by Metropolitan Water District of Southern California (MET). MET's imported water sources are the Colorado River and the State Water Project, which draws water from the Sacramento San Joaquin River Delta. MET provides drinking water to nearly 19 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties, and delivers an average of 1.7 billion gallons of water per day to a 5,200 square-mile service area. Your water is treated at the Diemer Filtration Plant in Yorba Linda by MET and delivered to the MNWD distribution system. MNWD's pipelines and reservoirs are utilized to deliver water to you when and where it is needed.

MET tests for unregulated chemicals in our water supply. Unregulated chemical monitoring helps the EPA and the 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 MET for treated surface water and the MNWD for the distribution system, your drinking water is continuously 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.

Drinking Water and Your Health

About Drinking Water Contaminants

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it can dissolve naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presences of animal or from human activity. 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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

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 stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- 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 gas stations, urban stormwater runoff, agricultural application and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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, MET 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, MET adjusted the natural fluoride level in imported treated water from the Colorado River and the State Water Project to the optimal range for dental health of 0.7 to 1.3 parts per million. Fluoride levels in drinking water are limited under California State regulations at a maximum dosage of two (2) parts per million.

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

United States Centers for Disease Control and Prevention
1-800-232-4636
www.cdc.gov/fluoridation/

California Department of Public Health
(916) 449-5600

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

American Water Works Association
(800) 926-7337
www.awwa.org

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



Courtesy Metropolitan Water District of Southern California

Footnotes

a. MET's reporting level is 0.5 ppb for each of the trihalomethanes (bromodichloromethane, bromoform, chloroform, and dibromochloromethane) which is lower than the state DLR of 1.0 ppb. Twelve (12) locations in the distribution system are tested quarterly for total trihalomethanes.

b. State DLR is 1.0 ppb for each of the following: dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid; and 2.0 ppb for monochloroacetic acid.

c. As a Primary Standard, the turbidity level of the filtered water were less than or equal to 0.3 NTU in 95% of the online measurements taken each month and did not exceed 1 NTU for more than one hour. Turbidity, a measure of the cloudiness of the water, is an indicator of treatment performance. The turbidity levels for grab samples at these locations were in compliance with the Secondary Standard. Pursuant to the 2012 Consumer Confidence Report Guidance, the state DLR for turbidity is 0.1 NTU.

d. Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment plants. In 2012, 8,037 samples were analyzed and six (6) samples were positive for total coliforms. The MCL was not violated.

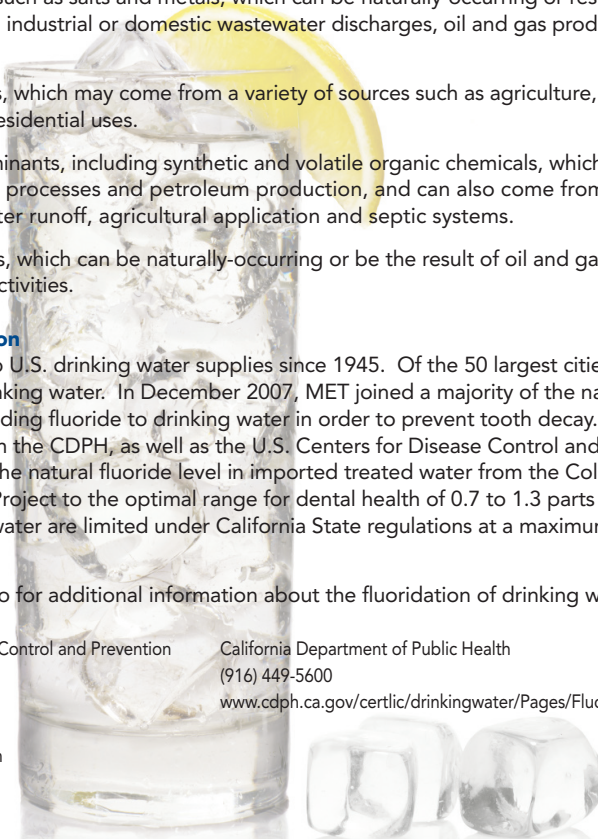
e. Aluminum, copper, MTBE and thiobencarb have both primary and secondary standards.

f. CDPH considers 50 pCi/L to be the level of concern for beta particles; the gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ.

g. MET was in compliance with all provisions of the State's Fluoridation System Requirements.

h. State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.

i. AI <10.0 = Highly aggressive and very corrosive water
AI ≥ 12.0 = Non-aggressive water
AI (10.0 - 11.9) = Moderately aggressive water



Cryptosporidium

Cryptosporidium is a microbial parasite found in surface water throughout the United States. Although *Cryptosporidium* can be removed by filtration, the most commonly used filtration cannot guarantee 100% removal. Symptoms of infection include nausea, diarrhea, fever, and abdominal cramps. MET tested their source water and treated surface water for *Cryptosporidium* in 2012 but did not detect it. If it ever is detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The EPA 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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

Information You Should Know About the Quality of Your Drinking Water

Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, 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. MNWD 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 two (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 at (800) 426-4791, or <http://www.epa.gov/safewater/lead>.

Disinfectants and Disinfection By-Products

Water Hardness

Levels of calcium and magnesium, which occur naturally in water, are the primary substances that determine whether water is hard or soft. Water from the Colorado River, MNWD's primary source of water, contains fairly high levels of these minerals and is considered "hard." Water hardness does not affect health. However, hard water does require more soap than soft water and will, over time, leave mineral deposits on plumbing fixtures. In 2012, the hardness found in your water averaged 210 parts per million or 12.2 grains per gallon.

This report contains important information about your drinking water.

”هذا التقرير يحتوي على معلومات مهمة تتعلق بمياه الشرب (أو الشرب).
ترجم التقرير، أو تكلم مع شخص يستطيع أن يفهم التقرير.“

此份有关你的食水报告,内有重要资料和讯息,请找他人為你翻译及解释清楚。

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

این اطلاعیه شامل اطلاعات مهمی است که شما باید بدانید. اگر نمی‌توانید این اطلاعات را بر زبان انگلیسی بخوانید یا بفهمید، لطفاً از کسی که می‌تواند این را به شما توضیح دهد یا به شما کمک کند.

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

Please speak with someone who understands this information and who can translate it for you.

Chloramines

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection is 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. Sufficient chlorine is added to your drinking water at the source of supply so that it does not completely dissipate through the distribution system pipelines. This "residual" chlorine helps to prevent the growth of bacteria in the pipelines 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 by-products that may pose health risks, called disinfection by-products (DBPs). Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine.

All of MNWD's drinking water is disinfected with chloramines, a combination of chlorine and ammonia. In addition, MNWD maintains its stored water through the addition of chloramines, as needed. Chloramines are effective killers of bacteria and other microorganisms that may cause disease. Compared to chlorine alone, chloramines last longer in the distribution system, form lower levels of THMs and HAAs, and have no odor when used properly.

A major challenge is how to balance the risks from microbial pathogens and DBPs. The Safe Drinking Water Act requires the EPA to develop rules to achieve these goals. In 1979, the EPA 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 By-Products Rule lowered the total THM maximum amount to 80 parts per billion. It also added HAAs to the list of regulated chemicals in drinking water. Your drinking water complies with the Stage 1 Disinfectants/Disinfection By-Products Rule.

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

People who use kidney dialysis machines may want to take special precautions and consult their health care providers for the appropriate type of water treatment. Customers who maintain fish ponds, tanks or aquariums should also make necessary adjustments in water quality treatment, as these disinfectants are toxic to fish. For further information or if you have any questions about chloramines, please call MNWD at (949) 448-4013.

Moulton Niguel Water District Distribution System Water Quality 2012

Disinfection By Product	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb) (a)	80	60.1	40.4 – 70.2	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb) (b)	60	22.6	13.7 – 36.4	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4/4)	2.2	0.9 – 3.4	No	Disinfectant Added for Treatment

Aesthetic Quality

	MCL	Average	Range of	MCL	Typical Source of Contaminant
Color (color units)	15*	<5	ND – <5	No	Erosion of Natural Deposits
Odor (TON)	3*	0.78	0.5 – 2.0	No	Erosion of Natural Deposits
Turbidity (NTU) (c)	5*	0.16	.07 – .89	No	Erosion of Natural Deposits

Twelve (12) locations in the distribution system are tested quarterly for Total Trihalomethanes and Haloacetic Acids; 52 samples are tested monthly for color, odor, and turbidity.

*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Bacterial Quality	MCL	MCLG	Highest Monthly % Percent Positives	MCL Violation?	Typical Source of Contaminant
Total Coliform Bacteria (d)	5%	0	0.8	No	Naturally Present in the Environment

No more than 5% of the monthly samples may be positive for total coliform bacteria. The occurrence of two (2) consecutive total coliform positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. A system is in non-compliance if more than 5% of samples collected on a given month have Heterotrophic Plate Counts greater than 500 Colony Forming Units per milliliter and no detectable chlorine residual.

	Action Level (AL)	Health Goal	90th Percentile Value**	Sites Exceeding AL / # of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	<5.0	0/51	No	Corrosion of Household Plumbing
Copper (ppm) (e)	1.3	0.3	0.20	0/51	No	Corrosion of Household Plumbing

Every three (3) years, 51 selected residences are tested for lead and copper. The most recent set of samples were collected in September 2012. Lead was detected in three (3) residences, which exceeded the regulatory Action Level (AL). Copper was detected in 22 residences; zero exceeded the regulatory AL. A regulatory AL is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

** 90th Percentile: The value in data set in which 90% of the set is less than or equal to this value. There is no MCL for lead and copper. Instead the 90th percentile value of all samples from household taps in the distribution system cannot exceed an AL of 0.015 mg/l for lead and 1.3 mg/l for copper.

Alternative Resources

The Metropolitan Water District of Southern California operates the Robert B. Diemer Water Treatment Plant in Yorba Linda, which treats water delivered to our region from Northern California and the Colorado River before it is delivered to water providers including MNWD, and then to our customers. The Diemer Plant closes periodically to undergo extensive upgrades, rehabilitation and/or maintenance to the facility's treatment and disinfection systems. MNWD relies upon our investments into various water system reliability projects to continue to provide drinking water throughout our service area during planned shutdowns or emergencies. During the year 2012, MNWD received less than one (1) percent of its drinking water from Irvine Ranch Water District (IRWD). If you would like more information regarding IRWD's Distribution System's Water Quality, please contact Lars D. Oldewage at (949) 453-5858.

Abbreviations

AI	Aggressiveness Index	N	Nitrogen	ppb	parts per billion or micrograms per liter (µg/L)
AL	Action Level	N/A	Not Applicable	ppm	parts per million or milligrams per liter (mg/L)
DLR	Detection Limits for Purposes of Reporting	ND	Not Detected	SI	Saturation Index (Langelier)
MCL	Maximum Contaminant Level	NL	Notification Level	TOC	Total Organic Carbon
MCLG	Maximum Contaminant Level Goal	NTU	Nephelometric Turbidity Units	TON	Threshold Odor Number
MRDL	Maximum Residual Disinfectant Level	pCi/L	picoCuries per liter	TT	Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water
MRDLG	Maximum Residual Disinfectant Level Goal	PHG	Public Health Goal	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

2012 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG (MCLG)	DLR	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Radiologicals							
Gross Alpha Particle Activity (pCi/L)	15	(0)	3	3	ND – 3	No	Erosion of Natural Deposits
Gross Beta Particle Activity (pCi/L) (f)	50	(0)	4	ND	ND – 4	No	Decay of Man-Made or Natural Deposits
Uranium (pCi/L)	20	0.43	1	2	2	No	Erosion of Natural Deposits
Inorganic Chemicals							
Aluminum (ppb) (e)	1,000	600	50	150	ND – 340	No	Residue from Water Treatment Process; Natural Deposits Erosion
Fluoride Treatment-related (ppm) (g)	Control Range 0.7–1.3 ppm	Optimal Level 0.8 ppm	0.1	0.8	0.7–1.3	No	Water Additive for Dental Health
Fluoride Naturally-occurring (ppm) (g)	2.0	1	0.1	0.8	0.7–0.8	No	Erosion of Natural Deposits
Nitrate (as N) (ppm) (h)	10	10	0.4	ND	ND	No	Runoff/Leaching from Fertilizer Use; Septic Tank and Sewage; Natural Deposits Erosion
Secondary Standards							
Aluminum (ppb) (e)	200*	600	50	150	ND – 340	No	Residue from Water Treatment Process; Natural Deposits Erosion
Chloride (ppm)	500*	N/A	N/A	90	87 – 93	No	Runoff/Leaching from Natural Deposits; Seawater Influence
Color (units)	15*	N/A	N/A	1	1	No	Naturally-occurring Organic Materials
Odor Threshold (TON)	3*	N/A	1	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µs/cm)	1,600*	N/A	N/A	780	340 – 930	No	Substances that Form Ions in Water; Seawater Influence
Sulfate (ppm)	500*	N/A	0.5	160	160	No	Runoff/Leaching from Natural Deposits; Industrial Wastes
Total Dissolved Solids (ppm)	1,000*	N/A	N/A	500	490 – 500	No	Runoff/Leaching from Natural Deposits; Seawater Influence
Turbidity (NTU) (c)	5*	N/A	0.1	ND	ND	No	Soil Runoff
Unregulated Chemicals							
Alkalinity (ppm)	N/A	N/A	N/A	98	53 – 120	N/A	
Boron (ppb)	NL = 1,000	N/A	100	130	130	N/A	Runoff/Leaching from Natural Deposits; Industrial Wastes
Calcium (ppm)	N/A	N/A	N/A	51	49 – 53	N/A	
Corrosivity (as Al) (i)	N/A	N/A	N/A	12.2	12.2	N/A	Elemental Balance in Water; Affected by Temperature, Other Factors
Corrosivity (as Si)	N/A	N/A	N/A	0.36	0.35 – 0.38	N/A	
Hardness (ppm)	N/A	N/A	N/A	210	84 – 270	N/A	
Hardness, Total (grains/gallon)	N/A	N/A	N/A	12.2	4.9 – 15.8	N/A	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	N/A	N/A	N/A	21	21	N/A	
pH (pH units)	N/A	N/A	N/A	8.1	7.9 – 8.4	N/A	
Potassium (ppm)	N/A	N/A	N/A	4.0	4.0	N/A	
Sodium (ppm)	N/A	N/A	N/A	80	80 – 81	N/A	
TOC (ppm)	TT	N/A	0.30	2.4	2.0 – 2.7	N/A	Various Natural and Man-Made Sources

* Contaminant is regulated by a secondary standard.

Turbidity - Combined Filter Effluent	Treatment Technique (TT)	Turbidity Measurements	TT Violation?	Typical Source of Contaminant
1) Highest single turbidity measurement	0.3 NTU	0.04	No	Soil Runoff
2) Percentage of samples less than 0.3 NTU	100%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water; monitored because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfections. Low turbidity is a good indicator of effective filtration.

What Are Water Quality Standards?

The tables on the previous pages list all the drinking water contaminants that MNWD detected during the 2012 calendar year. The presence of these contaminants in water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented, is from testing done from January 1 through December 31, 2012. The state allows the District 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.

Your water is tested for more than 100 required constituent substances and is continually monitored to ensure that it meets all state and federal standards. Only those substances that were detected have been listed in the tables. All of the contaminants fall within the state and federal standards to ensure your water is safe to drink.

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

Disinfection By-Product:

Compounds which are formed from mixing of organic or mineral precursors in the water with chlorine or chloramines. Bromate, Total Trihalomethanes, Haloacetic Acids and NDMA are disinfection by-products.

Maximum Contaminant Level (MCL):

The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs) or Maximum Contaminant Level Goals (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 (PDWS):

MCLs and MRDLs 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.

Variances and Exemptions:

Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

What is a Water Quality Goal?

In addition to mandatory water quality standards, the EPA and the 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 guidelines and direction for water management practices. The tables in this report, includes three types of water quality goals:

Maximum Contaminant Level Goal (MCLG):

The level of contaminant in drinking water below, which there is no known or expected risk to health. MCLGs are set by the EPA.

Maximum Residual Disinfectant Level Goal (MRDLG):

The highest 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 EPA.

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) and parts per billion (ppb) or micrograms per liter ($\mu\text{g/L}$).

Parts per million:

- 3 drops in 42 gallons
- 1 second in 12 days
- 1 penny in \$10,000
- 1 inch in 16 miles

Parts per billion:

- 1 drop in 14,000 gallons
- 1 second in 32 years
- 1 penny in \$10 million
- 1 inch in 16,000 miles

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

For information about MNWD's water quality or to find out about upcoming opportunities to participate in public meetings, please contact Kelly Winsor in the Outreach Department at (949) 448-4013 or at outreach@mnwd.com.

You may also contact us at
27500 La Paz Road, Laguna Niguel, California 92677.

Additional information, including copies of this report, can be found on our website at www.MNWD.com.

For more information about health effects of the listed constituents in the tables, please call the EPA's hotline at (800) 426-4791.