

June 2008 Moulton Niguel Water



Drinking Water Quality

Moulton Niguel Water District is pleased to report that once again, through safe and effective treatment, the drinking water provided by the District meets and exceeds the standards required by state and federal regulatory agencies.



The following information provides a review of water quality for 2007. 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 consumers are our best customers.

The United States Environmental Protection Agency (USEPA) and the California Department of Health Services (DHS) are the agencies responsible for establishing drinking water quality standards. To ensure that your water is safe to drink, USEPA and DHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

What You Need to Know

Sources of Your Drinking Water

Your drinking water originates from the Colorado River and the State Water Project, which draws water from the San Francisco-San Joaquin Bay Delta. Each water source has unique water quality challenges.

The water travels hundreds of miles through an intricate delivery system of the Metropolitan Water District of Southern California (MWDSC). As it travels over the surface of the land or through the ground, it can pick up substances left behind from animals or people, and it dissolves minerals and sometimes radioactive material.

Your water is treated at the Diemer Filtration Plant in Yorba Linda by MWDSC and delivered to the Moulton Niguel Water District distribution system. Moulton Niguel's pipelines and reservoirs are utilized to deliver the water to you when and where it is needed.



Drinking Water & Your Health



Protecting Water Quality at the Source

In December 2002, MWDSC 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 MWDSC by telephone at (213) 217-6850.

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 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).

Contaminants that may be present in Colorado River and State Water Project source water before it arrives in Southern California and enters MWDSC's treatment system include:

- Microbial contaminants, such as viruses and bacteria, which may come from wastewater 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, that are byproducts of industrial processes and petroleum production, and can also come from gasoline stations, urban/storm water runoff, agricultural application, and septic systems.

Precautions for Some to Consider

Some people may be more vulnerable to constituents in the water than the general population. This may be a result of a weakened immune system due to chemotherapy treatment, organ transplantation, HIV/AIDS or other immune system disorders. Even some elderly persons and infants can be particularly at risk of infections. People with these profiles should get additional advice about drinking water from their healthcare providers.

Some contaminants are known to cause problems for people with weakened immune systems. This is the case with a microscopic parasite called "*Cryptosporidium*" which can cause a life-threatening infection. *Cryptosporidium* may be found in untreated surface water. It shows up very infrequently, and in low levels, in Southern California's untreated water supply.

The MWDSC tests your water for *Cryptosporidium*. *Cryptosporidium* was not detected in 2007. If it should be detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

Guidelines from USEPA and the federal Centers for Disease Control and Prevention to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline at (800) 426-4791.

Current Water Issues

Total Trihalomethanes (THMs)

THMs are a family of chemicals formed when chlorine is added as a disinfectant. Disinfection is an important and necessary step in the water treatment process to protect against harmful bacteria and other possible contamination and chlorine is the most widely used and approved disinfectant in the United States. Moulton Niguel Water District uses chloramine (a blend of chlorine and ammonia) as a way to reduce the THMs in your water.

Results of a health study released in early 1998 suggest that women who drink five glasses of tap water daily and are in their first three months of pregnancy may have an increased risk of miscarriage from levels of THMs in drinking water. State officials, however, have cautioned that the study is not definitive and have stated that more study on the issue is needed.

Because of concerns about health effects, the THM standard of 100 parts per billion (ppb) was lowered to 80 ppb effective January 2002. *In 2007, Moulton Niguel's THM levels ranged between 35.5 – 94.8 parts per billion.*

MTBE

This gasoline additive, designed to reduce harmful car emissions, has become a serious contamination problem when underground tanks have leaked into ground water basins, requiring the closure of many drinking water wells. Gasoline-powered watercraft have also contaminated some surface water sources of supply. *In 2007, MTBE was not detected in Moulton Niguel water.*

Arsenic

On February 22, 2002, a new arsenic standard was adopted by the USEPA, setting the allowable level of arsenic in drinking water at 10 ppb. The level was lowered from the previous standard of 50 ppb, in light of new studies linking arsenic in water to bladder, lung and skin cancer, as well as kidney and liver cancer and other nervous and vascular system complications. The new rule requires that all water systems be in compliance by January 23, 2006. *Arsenic found in the water in 2007 ranged from was ND (Not Detected) – 2.8 parts per billion. The average was ND.*

Lead

Infants and young children typically are 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 possible elevated lead levels in your home's water, you may wish to have your water tested by an independent laboratory and flush your tap for 30 seconds to 2 minutes before using the water.

Additional information is available from the USEPA Safe Drinking Water Hotline at (800) 426-4791. *In 2007, lead was not detected in Moulton Niguel water.*

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, Moulton Niguel'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 2007, the Hardness found in your water averaged 201 parts per million or 11.8 grains per gallon.*

Fluoride

In November 2007, the MWDSC, Moulton Niguel's water supplier, joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. Previously, low levels of naturally occurring fluoride were present.

In line with recommendations from the California Department of Health Services, as well as the U.S. Centers for Disease Control and Prevention, MWDSC will adjust the natural fluoride level in the water, which ranges from 0.1 to 0.4 parts per million, to the optimal range for dental health of 0.7 to 0.8 parts per million.

Fluoride levels in drinking water are limited under California state regulations at a maximum concentration of 2 parts per million.

Fluoride has been added to numerous U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water.

In 2007, Moulton Niguel's naturally-occurring fluoride levels averaged 0.2 parts per million. Data for the naturally-occurring fluoride were taken before the fluoridation treatment began in November 2007. MWDSC was in compliance with all provisions of the State's Fluoridation System Requirements.

For additional information on fluoride, please visit www.mwdh2o.com.

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

For information about your water quality or to find out about upcoming opportunities to participate in public meetings, please contact
Kathleen Hedges
at (949) 831-2500.

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 following
tables, call the EPA hotline at
(800) 426-4791.

This information is important. Have someone translate it for you.

これは重要な情報ですので、翻訳を依頼してください。

Esta información es importante. Por favor pídale a alguien que se la traduzca.

此乃重要資料，必須請人替您翻譯。

این اطلاعیه مهم می باشد. از کسی بخواهید که این را به شما ترجمه کند.

이 자료는 매우 중요한 것입니다. 그러므로 영어를 할 수 있는 사람한테 번역해 줄 것을 부탁드립니다.

For additional copies of this report, please call (949) 831-2500.

Moulton Niguel Water District Distribution System Water Quality 2007

Parameter	Primary MCL [MRDL]	Average Amount	Range of Detections	MCL/ MRDL Violation?	Typical Source of Contaminant
Total Coliform Bacteria (%)	5.0 (a)	0.49	0 – 1.5	No	Naturally present in the environment
Fecal Coliform/ <i>E. coli</i> (%)	(b)	0.06	0 – 0.8	No	Human and animal fecal waste
Total Trihalomethanes (TTHM) (ppb) (c)	80	53.7	35.5 – 94.8	No	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (ppb) (d)	60	29.1	9.2 – 35.9	No	By-product of drinking water chlorination
Total Chlorine Residual (ppm)	4.0	2.3	0.5 – 3.0	No	Drinking water disinfectant added for treatment
Turbidity (NTU) (e)	TT	0.13	0.06 – 0.60	No	Soil runoff
Color (Units) (e)	15	<5	ND – <5	No	Naturally occurring organic materials
Odor Threshold (Units) (e)	3	0.7	0.5 – 2.0	No	Naturally occurring organic materials
pH (Units)	TT	8.1	7.8 – 8.3	No	
Heterotrophic Plate Count (CFU/mL)	TT	3	<1 – 19	No	Naturally present in the environment

Footnotes

- No more than 5.0% of the monthly samples may be total coliform-positive. The MCL was not violated.
- The occurrence of 2 consecutive total coliform-positive samples, one of which contains fecal coliform/*E. coli*, constitutes an acute MCL violation. The MCL was not violated.
- Twelve locations in the distribution system are tested quarterly for total trihalomethanes.
- DLR = 1.0 ppb for each HAA5 analyte (dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid) except for monochloroacetic acid which has a DLR = 2.0 ppb.
- Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color). Eleven locations are tested weekly for color, odor and turbidity.

Lead and Copper Action at Residential Taps

	Action Level (AL)	Health Goal	90th Percentile Value	Sites Exceeding AL / # of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	2	ND<5	0/52	No	Corrosion of household plumbing
Copper (ppm)	1.3	0.17	0.260	0/52	No	Corrosion of household plumbing

Every three years, selected residences are tested for lead and copper at-the-tap. The most recent set of 52 samples was collected in 2006. Neither lead nor copper was detected above the regulatory action level in any sample. A regulatory action level is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

ABBREVIATIONS

AI	Agressiveness Index	NC	Not Collected
AL	California Action Level	ND	None Detected
CFU/mL	Colony Forming Units per milliliter	NTU	Nephelometric Turbidity Units
DLR	Detection Limits for purposes of Reporting	pCi/L	picoCuries per Liter
HAA5	Haloacetic Acids (five)	PHG	Public Health Goal
ICR	Information Collection Rule	ppb	parts per billion or micrograms per liter (µg/L)
MCL	Maximum Contaminant Level	ppm	parts per million or milligrams per liter (mg/L)
MCLG	Maximum Contaminant Level Goal	SI	Saturation Index (Langelier)
MRDL	Maximum Residual Disinfectant Level	TOC	Total Organic Carbon
MRDLG	Maximum Residual Disinfectant Level Goal	TON	Threshold Odor Number
N	Nitrogen	TTHM	Total Trihalomethanes
NA	Not Applicable	TT	Treatment Technique
		µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Metropolitan Water District of Southern California Treated Surface Water

Parameter	State MCL	PHG or MCLG	State DLR	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
PRIMARY STANDARDS – Mandatory Health-Related Standards							
<u>Semi-Volatile Organic Compounds</u>							
Acrylamide	TT	(0)	NA	TT	TT	No	Water treatment chemical impurities
Epichlorohydrin	TT	(0)	NA	TT	TT	No	Water treatment chemical impurities
<u>Inorganic Chemicals</u>							
Aluminum (ppb) (a)	1000	600	50	75	ND – 120	No	Residue from water treatment process; natural deposits erosion
Arsenic (ppb)	10	0.004	2	ND	ND – 2.8	No	Natural deposits erosion; glass and electronics production wastes
Barium (ppb)	1000	2000	100	ND	ND – 103	No	Oil and metal refineries discharge; natural deposits erosion
Fluoride (ppm) (b) (Naturally-occurring)	2	1	0.1	0.2	0.1 – 0.2	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Fluoride (ppm) (b) (Treatment-related)	(b)	1	0.1	(b)	0.6 – 0.9	No	Water additive for dental health
Nitrate (as N) (ppm) (c)	10	10	0.4	0.5	ND – 0.7	No	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
<u>Radiologicals (d)</u>							
Gross Alpha Particle Activity (pCi/L)	15	(0)	3	ND	ND – 7.2	No	Erosion of natural deposits
Gross Beta Particle Activity (pCi/L) (e)	50	(0)	4	ND	ND – 6.4	No	Decay of man-made and natural deposits
SECONDARY STANDARDS – Aesthetic Standards							
Aluminum (ppb) (a)	200	600	50	75	ND – 120	No	Residue from water treatment process; natural deposits erosion
Chloride (ppm)	500	NA	NA	88	75 – 101	No	Runoff or leaching from natural deposits; seawater influence
Specific Conductance (µS/cm)	1600	NA	NA	801	674 – 893	No	Substances that form ions in water; seawater influence
Sulfate (ppm)	500	NA	0.5	158	122 – 179	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS) (ppm)	1000	NA	NA	469	394 – 519	No	Runoff/leaching from natural deposits; seawater influence
Turbidity (Monthly) (NTU) (f)	5	NA	NA	0.04	0.03 – 0.05	No	Soil runoff
UNREGULATED CHEMICALS REQUIRING MONITORING							
Boron (ppb)	NA	NL = 1,000	100	140	130 – 150	NA	Runoff/leaching from natural deposits; industrial wastes
Chromium VI (ppb) (g)	NA	NA	1	0.11	0.09 – 0.13	NA	Industrial waste discharge ; could be naturally present as well
Vanadium (ppb)	NA	NL = 50	3	3.3	ND – 3.7	NA	Naturally-occurring; industrial waste discharge
ADDITIONAL PARAMETERS							
<u>Federal Regulated Contaminants with No MCLs (h)</u>							
<u>List 1 – Assessment Monitoring</u>							
Perchlorate (ppb)	NA	NA	4	ND	ND – 4.1	NA	Industrial waste discharge
<u>Other Parameters</u>							
Alkalinity (ppm)	NA	NA	NA	93	82 – 103	NA	
Calcium (ppm)	NA	NA	NA	46	36 – 55	NA	
Chlorate (ppb) (i)	NA	NL = 800	20	24 – 43(o)	ND – 36	NA	By-product of drinking water chlorination; industrial processes
Corrosivity (Al) (j)	NA	NA	NA	12.2	12.0 – 12.3	NA	Elemental balance in water; affected by temperature, other factors
Corrosivity (SI) (k)	NA	NA	NA	0.32	0.17 – 0.45	NA	
Hardness (ppm)	NA	NA	NA	201	158 – 228	NA	
HPC (CFU/mL) (l)	TT	NA	NA	ND	ND – 2	NA	Naturally present in the environment
Magnesium (ppm)	NA	NA	NA	21	16 – 23	NA	
N-Nitrosodimethylamine (NDMA) (ppt) (m)	NA	3	2	ND – 8.2 (o)	ND	NA	By-product of drinking water chloramination; industrial processes
Potassium (ppm)	NA	NA	NA	3.9	3.4 – 4.3	NA	
Sodium (ppm)	NA	NA	NA	83	73 – 91	NA	
Total Organic Carbon (TOC) (ppm) (n)	TT	NA	0.30	2.2	1.9 – 2.9	NA	Various natural and man-made sources

Turbidity- Combined Filter Effluent	State MCL	Turbidity Measurements	TT Violation?	Typical Source of Contaminant
1) Highest single turbidity measurement (NTU)	0.3	0.05	No	Soil runoff
2) Percentage of samples less than 0.3 NTU	95%(p)	100	No	Soil runoff

Footnotes

- a) Aluminum has both primary and secondary standards.
- b) Data for the naturally-occurring fluoride were taken before the fluoridation treatment began. Fluoridation treatment of water supplies began November 2007 by MWSDC. MWSDC was in compliance with all provisions of the State's Fluoridation System Requirements.
- c) State MCL is 45 mg/L as nitrate, which equals 10 mg/L as N.
- d) Reported results were taken from four consecutive quarters of monitoring from August 2005 to April 2006.
- e) The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.
- f) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance. The monthly averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.
- g) Chromium VI reporting level is 0.03 ppb.
- h) Data collected from January 2002 to January 2003. Minimum reporting levels are as stipulated in the Federal Unregulated Contaminants Monitoring Rule (UCMR). List 1 – Assessment Monitoring consists of 12 chemical contaminants for which standard analytical methods were available.
- i) Ranges for the plant effluent were taken from two quarterly samples. Distribution system-wide range was taken from a total of eight samples.
- j) AI measures the aggressiveness of water transported through pipes. Water with AI < 10.0 is highly aggressive and would be very corrosive to almost all materials found in a typical water system. AI greater or equal to 12.0 indicates non-aggressive water. AI between 10.0 and 11.9 indicates moderately aggressive water.
- k) SI measures the tendency for a water to precipitate or dissolve calcium carbonate (a natural mineral in water). Positive indices indicate the tendency to precipitate and/or deposit scale on pipes and are assumed to be non-corrosive. Negative indices indicate the tendency to dissolve calcium carbonate and are assumed to be corrosive.
- l) HPC values were based on the monthly averages of the treatment plant effluent samples. In 2007, all distribution samples collected had detectable total chlorine residuals and no HPC was required.
- m) Ranges for the treatment plant effluent were taken from quarterly samples. Distribution system-wide range was taken from 19 samples collected quarterly.
- n) Average and range for TOC were taken from weekly samples collected at the combined filter effluent.
- o) This is the distribution system-wide range.
- p) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance. The monthly averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.

Moulton Niguel's Water Quality Data

The tables on the preceding pages list all the drinking water contaminants that we detected during the 2007 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, 2007. 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.

Your water is tested for more than 100 required constituents 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.

Definitions

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 and maximum contaminant level goals as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

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 U.S. Environmental Protection Agency (EPA).

Maximum Residual Disinfectant Level (MRDL)

The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U.S. EPA.

Primary Drinking Water Standard (PDWS)

MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Public Health Goal (PHG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. Public health goals are set by the California Environmental Protection Agency.

Regulatory Action Level (AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Variance

State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

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:

- 💧 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