

2016 Rainbow Municipal Water District Annual Drinking Water Quality Report

Water Quality Monitoring

Rainbow Municipal Water District (RMWD) is pleased to provide you with the Annual Drinking Water Quality Report for calendar year 2016. This brochure is a snapshot of the water quality information that was compiled during 2016. Included are details about where your water comes from, what it contains, and how it compares to Federal and State standards. Last year, we conducted more than 264 tests for total coliform bacteria. RMWD routinely monitors the distribution system for drinking water contaminants. The State Water Resources Control Board - Division of Drinking Water (SWRCB-DDW) requires that no more than 5% of the water samples collected per month may test positive for total coliform. RMWD was in compliance for the entire year.

Coliforms are bacteria, which are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

Usually, coliforms are a sign that there could be a problem with the treatment system or the distribution system. Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or E. coli, are present.

Storage Facility Inspections

RMWD's water storage and distribution system includes over 320 miles of pipeline, 12 closed steel tanks, and 1 concrete tank as well as 3 covered reservoirs. RMWD completed monthly tank and reservoir inspections as part of a routine preventative maintenance plan. Every 2 years, tanks are taken offline to inspect, clean and perform repairs if needed.

Where does my water come from?

RMWD purchases 100% of its treated water from the San Diego County Water Authority (SDCWA). SDCWA, in turn purchases its water from the Metropolitan Water District of Southern California (MWD). Water is delivered to our District from SDCWA and MWD using a complex system of aqueducts and pipes. Since Carlsbad's Claude "Bud" Lewis Desalination Plant (Poseidon) was put into service in late 2015, water has been delivered to the Twin Oaks Water Treatment Plant (TOWTP) located in northern San Diego County. Approximately 7% is a blend of desal

water from TOWTP. This blended water is distributed to the southern end of RMWD during periods of low demands. Please refer to the Standards Table for more information. The water contains a mixture of chlorine and ammonia, which creates a strong disinfectant known as chloramines. Chlorine residual is constantly monitored, and when applicable, RMWD injects small amounts of chlorine into the water at facilities throughout RMWD. Should a water quality problem occur, RMWD is prepared to take remedial action as set forth in an Operational Plan approved by the SWRCB-DDW.

Source Water Assessment

In 2011, MWD 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 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. Source water protection is not only important for the environment, but also for California residents by ensuring safe drinking water. A copy of the assessment can be obtained on the MWD website at: www.mwdh2o.com, or by calling: (800) 225-5693.

Certified Operators

The District's water system operators are certified in both water distribution and water treatment. Water system operator competency is critical for the protection of public health and the maintenance of safe, optimal and reliable operations of water treatment and distribution facilities. SWRCB-DDW guidelines ensure that operators have the operational skills, knowledge, experience, education and training required to operate a water system. Once water system operators are initially trained and certified, they are required to recertify every 3 years through continued education to ensure competency. The requirements issued by SWRCB-DDW will provide baseline standards for efficient and effective State Water Operator Certification programs.

Why are there contaminants in my drinking water?

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the United States Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline at: (800) 426-4791 or look for it on the EPA's website at: www.epa.gov/safewater.com. 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 the land or through the ground, it dissolves naturally occurring minerals and in some cases, radio-active material and can pick up substances resulting from the presence



of animals or from 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, that can be naturally occurring or result from urban 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 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 gas stations, urban storm water runoff and septic systems.
- 💧 **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and SWRCB- DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

RMWD routinely monitors for contaminants in your drinking water according to federal and state laws. The table in this brochure shows the results of our monitoring for the period of January 1, 2016 to December 31, 2016.

What about lead in my drinking 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. RMWD 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 minutes before using water for drinking or cooking.

As part of the USEPA Lead & Copper Rule, every three (3) years RMWD is required to collect samples based on population and service connections within the distribution system. 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) 225-5693 or at: www.epa.gov/safewater/lead.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA and Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline at: (800) 426-4791. Cryptosporidium (“crypto”) is a microscopic organism found in rivers and streams and comes from animal wastes in the water-shed. When ingested by humans, it may result in a variety of gastrointestinal symptoms including diarrhea, nausea and fever. MWD has tested for crypto in its treated water supplies for years. Since 1997, this organism has not been detected in either MWD’s source water or treated water.

Water Use Efficiency

Water is our most precious natural resource and with some water efficient practices, we will have it when we need it. Check your water meter to see if it is spinning when all your water is turned off. If the dial is still moving, you probably have an undetected leak somewhere on the property. With the right landscape, irrigation maintenance and new high-efficiency irrigation parts, outdoor water use efficiency is easy. Plan and design your landscape for aesthetics and most of all, water efficiency. Turf is the biggest water user so be selective with this landscape component and in some situations lawn can be replaced with trees, shrubs, boulders, pathways or mulched areas.

How can I get involved?

For additional water quality or water use efficiency information, please contact RMWD’s Customer Service at: (760) 728-1178 or visit our updated website at: www.rainbowmwd.com. We want you, our valued customers, to be informed about your water utility. If you want to learn more, you are invited to attend any of our regularly scheduled Board of Directors meetings. Meetings are held every fourth Tuesday of the month at RMWD located at 3707 Old Highway 395, Fallbrook, CA 92028. Check the website for times at: www.rainbowmwd.com.



Rainbow Municipal Water District's Mission Statement:
To provide our customers reliable, high quality water and water reclamation services in a fiscally sustainable manner

PRIMARY STANDARDS – MANDATORY HEALTH-RELATED STANDARDS

Microbiological Contaminants	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria (b)	0 in the year	0	No more than 2 positive monthly samples	0	Naturally present in the environment
Fecal Coliform or E. coli	0 in the year	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E. coli	0	Human and animal fecal waste

INORGANIC COMPOUNDS – SAMPLED IN HOME TAPS IN 2015

Lead and Copper (to be completed only if there was a detection of lead or copper in the last sample set)	No. of Samples Collected	90 th Percentile Level Detected	No. of Sites Exceeding AL	AL	PHG	Typical Source of Contaminant
Copper (d) (ppm)	30	.71	1	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits
Lead (d) (ppb)	30	<0.005	0	15	0.2	Internal corrosion of household water plumbing systems; Discharges from industrial manufacturers; erosion of natural deposits

SPECIAL LEAD & COPPER MONITORING DUE TO NEW SOURCE AS REQUIRED BY SWRCB

Lead and Copper (to be completed only if there was a detection of lead or copper in the last sample set)	No. of Samples Collected	90 th Percentile Level Detected	No. of Sites Exceeding AL	AL	PHG	Typical Source of Contaminant	
		06/2016 09/2016					
Copper (d) (ppm)	22	.52	.36	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits
Lead (d) (ppb)	22	<0.005	<0.005	0	15	0.2	Internal corrosion of household water plumbing systems; Discharges from industrial manufacturers; erosion of natural deposits

INORGANIC COMPOUNDS – CONTINUED

	SKINNER WTP		TWIN OAKS WTP		CARLSBAD DESAL PLANT		MCL [MRDL]	(MCL/G) [MRDL/G]	Major Sources in Drinking Water.
	Average	Range	Average	Range	Average	Range			
Aluminum (ppb)	52 (a)	52	ND	ND	ND	ND	1000	600	Natural deposits erosion; residue from water treatment process
Arsenic (ppb)	ND	ND	2.4 (single sample)	N/A	ND	ND	10	0.004	Natural deposits erosion; glass and electronics production waste
Barium (ppb)	129	129	100 (single sample)	N/A	0.8	ND - 1.6	1000	2000	Oil and metal refiners discharge; natural deposits erosion
Fluoride (ppm)	0.7	0.6 – 0.9	0.7	0.5 – 0.9	0.7	0 – 1.45	2.0	1	Water additive that promotes strong teeth; erosion of natural deposits

CLARITY

	% <0.3	Highest	% <0.3	Highest	% <0.3	Highest	MCL [MRDL]	(MCL/G) [MRDL/G]	Major Sources in Drinking Water.
Combined Filter (NTU)	N/A	0.09	N/A	0.02	N/A	N/A	0.3	N/A	Soil runoff
Effluent Turbidity (%)	100	N/A	100	N/A	N/A	N/A	95 (c)	N/A	Soil runoff

PRIMARY STANDARDS – MANDATORY HEALTH-RELATED STANDARDS (Continued)

DETECTION OF CONTAMINENTS WITH A PRIMARY STANDARD					
Parameter (a)	Average	Range	MCL [MRDL]	(MCLG) [MRDLG]	Major Sources in Drinking Water
Haloacetic Acids(HAA5) (c)(ppb)	17	2.0-11	60	NA	By-product of drinking water chlorination
TTHM (c)(ppb) [Total trihalomethanes]	28	8.7-37	80	NA	By-product of drinking water chlorination
Total Chlorine Residual (ppm)	2.2	1.7-2.38	[4]	[4]	Drinking water disinfectant added for treatment

RADIONUCLIDE (pCi/L)					
	SKINNER WTP		TWIN OAKS WTP		CARLSBAD DESAL PLANT
	Average	Range	Average	Range	Average
Gross Alpha Particle Activity (pCi/L)	ND	ND-5	5	4-7	0.118
Gross Beta Particle Activity (pCi/L)	5	5	5	4-6	10.19
Uranium (pCi/L)	2	1-2	2.9	2.7-3.1	2.189

SECONDARY STANDARDS - AESTHETICS STANDARDS					
	SKINNER WTP		TWIN OAKS WTP		CARLSBAD DESAL PLANT
	Average	Range	Average	Range	Average
Aluminum (ppb)	52 (a)	52	ND	ND	ND
Chloride (ppm)	103	102-104	NRA	110	63.83
Color (units)	2	2	ND	ND	ND
Iron (ppm)	ND	ND	ND	ND	0.007
Odor Threshold (TON)	3	3	2 (single sample)	N/A	ND
Specific Conductance (uS/cm)	998	965-1030	NRA	1000	347.19
Sulfate (ppm)	234	229-238	NRA	240	17.3
Total Dissolved Solids (TDS) (ppm)	624	615-632	NRA	650	182

ADDITIONAL PARAMETERS					
	Average	Range	MCL [MRDL]	(MCLG) [MRDLG]	Major Sources in Drinking Water
Hardness (ppm)	284	274-294	NRA	270	59.8
Sodium (ppm)	102	101-104	NRA	99	47.14
Boron (ppb)	140	140	NRA	130	0.496

Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúscalo o hable con alguien que lo entienda bien

Frequently Asked Questions...

Does RMWD have hard or soft water?

During the past year, RMWD'S water hardness averaged 284 milligrams per liter (mg/L) (equal to 16.6 grains per gallon, 1 grain = 17.1 mg/L). This is considered "hard" water. Hard water may cause ice cubes to be cloudy and leave water spots on glasses. The two most common components of hard water are calcium and magnesium; both are important to good health. Some scientific studies have shown people who received hard water have reduced cardiovascular problems such as stroke, hypertension and heart problems.

What about water softeners?

There is more to water softeners than soft water. Softeners typically waste more water than they process because of the need to "flush" the softening system. In addition, softeners can release considerable salt by-products into wastewater treatment facilities, resulting in increased mineral levels.

Who regulates drinking water quality?

The USEPA establishes and enforces national drinking water standards. In California, enforcement of drinking water standards falls under the SWRCB-DDW. The Agency set MCLs for various compounds in water to provide safe drinking water supplies.

Why do I need a backflow prevention device?

After water passes through a water meter into a home or business, it must be prevented from flowing back into the main water supply. Backflow prevention devices are designed to maintain water quality by preventing this reversal of flow and keeping any potential pollutants or contaminants from entering the water supply. These devices play an essential role in protecting the integrity of our water systems and helping to keep our drinking water clean and safe.

Terms & Abbreviations

In this table, you will find many terms and abbreviations you may not be familiar with. To help you better understand these terms we've provided the following definitions:

AL – Regulatory Action Level: The concentration level of a contaminant, which if exceeded triggers treatment or other requirements, which a water system must follow.

MCL – Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to public health goals (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

MCLG – Maximum Contaminant Level Goal: The maximum level of a contaminant where there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

mg/L or ppm – Milligrams per liter (mg/L) or Parts per million (ppm) 1 part per million = 1 drop in 10 gallons.

MRDL – Maximum Residual Disinfectant Level: The level of disinfectant added for water treatment that may not be exceeded at the consumer's tap.

MRDLG – Maximum Residual Disinfectant Level Goal: The level of disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

NA – Not applicable.

ND – None Detected: Laboratory analysis indicates that the constituent is not present.

NL – Notification Level: Notification levels are health based advisory levels established by CDPH

NRA – No running average

NTU – Nephelometric Turbidity Units: A measure of the cloudiness of the water.

pCi/L – PicoCuries per liter: A measure of radioactivity.

PHG – Public Health Goal: The level of contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Agency.

PDWS – Primary Drinking Water Standard: MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

TON – Threshold odor number

TT – Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Umho/cm – Micromhos per centimeter (a measure of a substance's ability to convey electricity).

uS/cm – MicroSeimen per centimeter.

ug/L or ppb – Micrograms per liter (ug/L) or Parts per billion (ppb). 1 part per billion is = 1 drop in 10,000 gallons.

(a) Data shown are annual averages and ranges.

(b) Total coliform MCLs: For a water system collecting fewer than 40 samples per month, no more than 1 of the monthly samples may be total coliform positive.

(c) Calculated from the locational running annual average of quarterly samples.

(d) The Federal and State requirements for exceeding the action levels may include installing corrosion control treatment, collecting water quality parameter samples, or replacing lead service lines.

(e) The turbidity performance standards regulated by a treatment technique shall be less than or equal to 0.3 NTU in 95% of the measurements. Turbidity is the measure of the cloudiness of the water and is an indicator of treatment performance.

We have learned through our monitoring and testing that some contaminants have been detected. However, the EPA has determined that your water meets all drinking water health standards at these levels (c).



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