City of Redlands

2017

Consumer Confidence Report

The Drought's Not Out

Making Conservation a Way of Life

It's difficult to think of water conservation when rivers are flowing full and 20 feet of snow in mountains were canvassed throughout media outlets this winter. It is probably even more difficult to think of watering restrictions now that California's Governor Jerry Brown declared the statewide emergency drought over. What is not widely publicized, however, are the significant differences in weather that Southern California received in comparison to Northern California. This is the challenge the City of Redlands is currently faced with as we try to reach reduction targets by choosing to make conservation a way of life.

Since the drought emergency was declared over in April, the City chose to stay in Stage II restrictions. This is for two reasons: one, the restrictions set forth in Stage II are water waste prohibitions still in effect in the State and two, the ramifications of the drought still linger in the San Bernardino Valley. Bunker Hill Basin, the valley's largest groundwater basin and the one Redlands sits on, is at the second lowest levels ever recorded. In fact, San Bernardino Valley Water Conservation District, which oversees recharge operations within the basin, estimates a half million acre-feet decrease in water storage from 1993. This is largely due to changes in weather patterns like the drought we recently experienced.

One of Them is Not Like the Others

Although this past winter was the wettest we've seen historically, our region received only 17% more than our historic average, whereas the Feather River, just north of Sacramento, received double its historic average. So, while Northern California reservoirs are at or near capacity, our basin, which is essentially our local reservoir, is not. In fact, it would take several record breaking wet years to fill the deficit left in our basin. Additionally, most of the water that fell locally was rain, most of which flows to the ocean, limiting the benefit to our water supply.

Rainwater, often known as storm water, is quick moving and often too turbid to treat as it commingles with dirt and debris as it moves down the mountain toward the valley. Only about one-third of this water can be captured as recharge before it moves down the river. However, snowpack that comes from the San Bernardino mountains provides a cleaner, slower moving water supply in the spring and summer that can be captured and treated at our treatment plants.

Supply and Demand

Because of these differences, there is still work to be done to improve the health of the basin. In an effort to capitalize on wet years, the City has collaborated with regional basin management groups to purchase additional State Water Project Water (water from Northern California) when available for recharge, essentially "squirreling" it away for when it is needed. This improves supplies for dry years when surface water is not available, and improves the health of our basin.

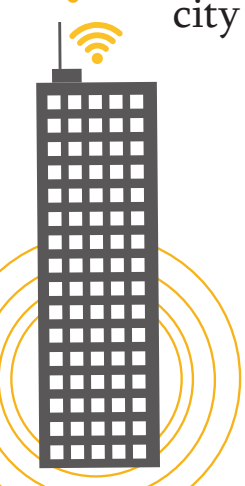
The City's efforts alone will not fix the problem. Customers must reduce demand by maintaining their conservation efforts. We cannot go back to our old ways. About 75% of the water used in Redlands is attributed to outdoor usage, simply put-- irrigation. We need to be mindful of where our water supply is being used and take action to curb unnecessary uses.

Incentives, tips, and other programs are available through the City to ensure customers are equipped to do their part. Please visit the City's website at cityofredlands.org/water/conservation or call 909-798-7527 ext. 2 to begin the steps to making conservation a way of life in Redlands.

"Customers must reduce demand by maintaining their conservation efforts. We cannot go back to our old ways. About 75% of the water used in Redlands is attributed to outdoor usage, simply put-- irrigation."

Making Water Smart

It's no secret that people make better decisions when they have sufficient information about their choices. It's hard to know which option is best unless we have some basis for comparison, some way of measuring investments and returns. This is true for individuals, businesses, governments and especially water utilities. The Smart Redlands initiative is, at its core, about data. It's a program that supports staff efforts to be intentional about gathering quality information and making intelligent choices. The Redlands water utility is playing a big role in shaping this program by actively developing a set of digital field tools which empower repair crews, water waste investigators and utility operators to better understand the condition and needs of the water system – all in real time from anywhere in the city via any connected device!



Working smarter

These tools, which are being built on Esri's suite of mobile apps, will allow a seamless flow of data between residents, customer service clerks, utility managers and operations staff. For example, under the current approach, repair requests, service connections, leak alerts and other such items are generated by customer service staff upon receipt of request. This work order is routed to a service manager or crew leader who assigns the job to field staff to carry out necessary tasks to complete the work order. Once the field staff finish the job, they take notes on their progress and return the work order to customer service for entry in a department database.

Going mobile

The new app-based tools eliminate not only the paper work involved, but the extra time it takes for staff to drive back and forth to City Hall to pick up new work orders. Because field crews enter their notes directly into the database,

customer service staff are more efficiently equipped to close out work orders and provide more timely responses to customers. This allows customer service staff to tackle more human-centric tasks such as answering customer questions or thinking creatively about water conservation issues. Perhaps more importantly, the data will no longer be siloed in a single database but will be available across the City's new geographic information systems for review and action by any department or division that needs the information.

A data pipeline

As this new high-quality data is aggregated over time, management staff will soon be able to perform highly sophisticated analysis on the information in order to answer deeper questions about things like current performance, the efficacy of drought responses, efforts to contain system costs or energy efficiency outcomes. The intelligence created through this analysis will help City leaders more quickly respond to problems, allow a proactive approach to solving potential problems before they arise, and make more informed decisions about much needed future infrastructure investments. These new tools will put Redlands on the cutting edge of water management and will allow the utility to do more with limited public resources. Ultimately, that means a better return on your water rate investments in the form of a safer and more sustainable supply of fresh water. That's Smart Redlands!

Meet Ira and Eva, the newest employees at the City of Redlands! They are on an important mission to help customers do their part to save water. Join them as they teach water efficient practices to little gators who live in Redlands.

The EduGators

IRA & EVA'S ADVENTURES

in Water Conservation

City of Redlands
WATER CONSERVATION

Water Conservation in the City of Redlands

The City of Redlands is actively working to ensure sustainable groundwater supplies for its customers. Since the majority of water supplied falls locally, the recent drought has had significant impact on our groundwater basin, resulting in continued watering restrictions. For a detailed list of watering restrictions, please visit www.cityofredlands.org/water/conservation

Watering Restrictions

- Even Addresses: Monday, Thursday and Saturday Only
- Odd Addresses: Tuesday, Friday and Sunday Only
- Irrigation is NOT allowed between Noon-8:00 PM
- Irrigation is prohibited during and 48 hours after significant rainfall
- Excessive water run-off and leaks are prohibited
- Use of water to wash sidewalks, pavement and structures is not allowed

Ira and Eva's Top Ways to be Water Efficient

Install a weather-based irrigation controller that irrigates based on plant needs and current weather, or simply attach a weather sensor to your existing irrigation controller to shut off irrigation when it starts to rain.

Consider changing out spray irrigation to drip irrigation in flower beds and around trees and shrubs.

Did you know drought tolerant landscaping requires 75% less water than grass lawns? Convert unused grass areas, such as parkways, into water friendly landscapes using beautiful drought tolerant trees, shrubs or flowers.

Check your irrigation system often for broken or misaligned sprinklers and prolonged run times which can lead to excessive run-off.

Want to find out what Ira and Eva are up to?
www.facebook.com/muedredlands
instagram-@muedredlands
www.cityofredlands.org/water/conservation

Water Source Protection

Redlands Municipal Utilities and Engineering Department is committed to protecting our water sources from possible contamination. Source water assessments have been completed for all of our drinking water supplies. You can view the source water assessments at our office: City of Redlands, 35 Cajon Street, Suite 15A, Redlands, CA 92373.

The assessments help to identify the vulnerability of drinking water supplies to contamination from typical human activities. These assessments are intended to provide basic information necessary for us to develop programs to protect our drinking water supplies. Possible contaminants can originate from: agricultural drainage, urban runoff, septic systems, sewer collection systems, junk/scrap/salvage operations, crop irrigation, underground storage tanks at automobile gas stations and illegal dumping.

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 USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Anyone interested in receiving a copy of the source water assessment should contact Bill Gane, Utility Operations Manager at (909) 798-7588 ext. 1. You can do your part to protect our precious water sources by properly disposing of household hazardous waste. To find out how to properly dispose of hazardous waste, so it does not contaminate groundwater, please phone our Customer Service office at (909) 798-7529, or visit www.cityofredlands.org/qol/recycling

Sampling Results Showing Treatment of Surface Water Sources - Turbidity is a measure of the cloudiness of water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system. Turbidity results, which meet performance standards, are considered to be in compliance with filtration requirements.

Turbidity Performance Standard No. 1 (TPS No. 1): The turbidity level of the combined filter effluent shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU for more than one hour. Additionally, the turbidity level of the combined filter effluent shall not exceed 1.0 NTU for more than eight consecutive hours while the plant is operating.

Treatment Technique: Conventional Filtration
Lowest Monthly % of Samples Meeting TPS No. 1: 100%
Highest single turbidity measurement during 2016: 0.18 NTU
Number of Violations to Any Surface Water Treatment Regulations: NONE

INFORMATION ABOUT RADON

Radon is a naturally occurring gas formed from the normal radioactive decay of uranium. In 2007 testing, radon was detected in our finished water supply. There are no regulatory limits prescribed for radon levels in drinking water – the pathway to radon exposure occurs primarily through its presence in the air. Exposure over a long period of time to air containing radon may cause adverse health effects. If you are concerned about radon in your home, testing is inexpensive and easy. For more information, call your State radon program (1-800-745-7236), the National Safe Council's Radon Hotline (1-800-SOS-RADON), or the EPA Safe Drinking Water Act Hotline (1-800-426-4791).

AIR BUBBLES IN THE WATER

Tap water that appears cloudy could simply have air (bubbles) in the water. Some well sources produce water with dissolved air that remains pressurized in the distribution pipelines until reaching the consumer. When the water flows from the faucet, the air is released and may form tiny air bubbles. After filling a glass, these bubbles will slowly rise and disappear.

Important Facts from the US EPA about Drinking Water

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, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in untreated source may include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production, and mining activities.

In order to ensure water is safe to drink, the United States Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water to provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice from their health care providers about drinking water. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants, as well as more information about contaminants and their potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791 or visit water.epa.gov/drink/hotline.

Contact Us

City of Redlands
Municipal Utilities and Engineering Department
PO Box 3005
35 Cajon Street, Suite 15A
Redlands, CA 92373
909-798-7698
http://www.cityofredlands.org/mued

CONSUMER CONFIDENCE REPORT

From January 1, 2016 to December 31, 2016, the City of Redlands conducted 16,646 water quality tests from samples taken at various locations throughout the water system in accordance with state and federal laws. The following tables list only those contaminants that were detected. It is important to note, that the presence of these contaminants, as detected in the water does not necessarily indicate that the water poses a health risk.

PRIMARY DRINKING WATER STANDARDS

CONSTITUENT	YEAR	MCL (MRDL) [TT]	PHG (MCLG)	REDLANDS WATER		SOURCE
MICROBIOLOGICAL CONSTITUENTS						
Total Coliform	2016	5%	0%	0.08%		Naturally present in the environment
INORGANIC CONSTITUENTS						
Aluminum (mg/L)	2014	1	0.6	0.01	ND-0.05	Erosion of natural deposits; residue from some surface water treatment processes
Barium (mg/L)	2014	1	2	0.018	0.013-0.037	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (ug/L)	2014	50	100	0.6	ND-5.3	
Fluoride (mg/L)	2014	2	1	0.64	0.34-0.94	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Hexavalent Chromium ((ug/L)	2015	10	0.02	0.72	0.24-1.5	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate as N (mg/L)	2016	10	10	1.16	ND-5.9	Run-off and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Perchlorate (ug/L)	2016	6	1	0.65	ND-4.0	Environmental Contamination from historic aerospace or other industrial operations; found in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries.
LEAD AND COPPER RULE						
Copper (mg/L)	2014	AL=1.3	0.3	0.21	31 sites	No violation. Internal corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives
Lead (ug/L)*	2014	AL=15	0.2	3.34	31 sites	No violation. Internal corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives
DISINFECTION BY-PRODUCTS, DISINFECTION RESIDUALS, DISINFECTION BY-PRODUCT PRECURSORS						
Total Trihalomethanes (ug/L)	2016	80	N/A	35	ND-120	Byproduct of drinking water disinfection
Haloacetic Acids (ug/L)	2016	60	N/A	20	ND-59	Byproduct of drinking water disinfection
Chlorine as Cl2 (mg/L)	2016	4	4	0.76	0.59-0.95	Drinking water disinfectant added for treatment
Total Organic Carbon (mg/L)	2016	[TT]	N/A	1.38	0.53-2.48	Various natural and manmade sources
RADIOACTIVE CONSTITUENTS						
Gross Alpha (pCi/L)	2015	15	0	1.53	ND-4.6	Erosion of natural deposits
Gross Beta (pCi/L)	2014	50	0	3.8	N/A	Decay of natural and man-made deposits

*If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Redlands is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at https://www.epa.gov/safewater

TERMS USED IN THIS REPORT

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. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

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 the US Environmental Protection Agency (US EPA).

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A: Not applicable

ND: Not detectable at testing limit.

SECONDARY DRINKING WATER STANDARDS

CONTITUENT	YEAR	SECONDARY MCL	REDLANDS WATER	RANGE	SOURCE
Aluminum (ug/L)	2014	200	10	ND-54	Erosion of natural deposits; residue from some surface water treatment processes
Chloride mg/L	2014	500	11.89	3.8-35	Runoff/leaching from natual deposits; seawater influence
Color (units)	2016	15	0.13	ND-15	Naturally occurring organic materials
Copper (mg/L)	2014	1	0.017	ND-0.2	Internal corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives
Iron (ug/L)	2014	300	57	ND-390	Leaching from natural deposits; industrial wastes
Manganese (ug/L)	2014	50	1.18	ND-5.6	Leaching from natural deposits
MBAS (Foaming Agents) (ug/L)	2009	500	0.003	ND-0.03	Municipal and industiral waste discharges
Odor - Threshold (TON)	2016	3	1.7	ND-17	Naturally-occurring organic materials
Specific Conductance (umhos/cm)	2016	1600	340	240-420	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	2014	500	29	16-56	Runoff/leaching from natural deposits; industrial wastes
Total Disolved Solids	2015	1000	235	180-378	Runoff/leaching from natural deposits
Turbidity, Laboratory (NTU)	2016	5	0.09	ND-0.64	Soil runoff

SAMPLING RESULTS FOR SODIUM AND HARDNESS

CONTITUENT	YEAR	MCL	PHG (MCLG)	REDLANDS WATER	RANGE	SOURCE
Sodium mg/L	2014	N/A	N/A	20	10-74	Generally naturally occurring
Hardness mg/L	2014	N/A	N/A	145*	100-190	Sum of polyvalent cations in the water, usually naturally occurring. *Equilvalent to 8.5 grains per gallon

ADDITIONAL MONITORING FOR UCMR

CONTITUENT	YEAR	NOTIFICATION LEVEL	RANGE	SOURCE
Chlorate (ug/L)	2014	800	48-230	
Molybdenum (ug/L)	2014	N/A	ND-7.5	
Strontium (mg/L)	2014	N/A	ND-0.36	
Vanadium	2014	50	0.26-5.9	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

TERMS USED IN THIS REPORT

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

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

Units of Measure: Parts per million (ppm) or milligrams per liter (mg/L). Parts per billion (ppb) or nanograms per liter (ng/L). Picocuries per liter (pCi/L): a measure of radiation. Umhos/cm: A measure of conductivity in water.

ADDITIONAL MONITORING CONSTITUENTS WITH NO MCLS

CONTITUENT	YEAR	NOTIFICATION LEVEL	REDLANDS WATER	RANGE
Alkalinity (mg/L)	2016	N/A	105	55-170
Bicarbonate (mg/L)	2014	N/A	153	110-190
Calcium (mg/L)	2014	N/A	44	30-58
Langelier Index at 25 C	2014	N/A	0.37	-0.13-0.7
Magnesium (mg/L)	2014	N/A	9	6.4-12
pH	2016	N/A	7.8	7.3-8.2
Potassium (mg/L)	2014	N/A	2.8	1.8-3.9

Redlands Water: Water source site average for water supplied to customers.

Range of Detection: The range (lowest to highest) of detected constituents.

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

Notification Level (NL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

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

THIS REPORT CONTAINS IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER. TRANSLATE IT OR SPEAK WITH SOMEONE WHO UNDERSTANDS IT.

ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA POTABLE. TRADÚZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

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