2013 Annual Water Quality Report

Rubio Cañon Land and Water Association

Rubio Cañon Land and Water Association (RCLWA) is a mutual water company established in1886 located in the unincorporated town of Altadena, in Los Angeles County, California. For 128 years, RCLWA has supplied potable drinking water to the central and eastern portions of Altadena, north of Pasadena. The approximate population is 9,600 people served by approximately 3,140 water service connections. A five member Board of Directors governs RCLWA. The mission of RCLWA is to provide shareholders within its service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way. In addition to supplying high quality water, RCLWA is continuing to upgrade its infrastructure to ensure that your water will be reliably available. We are doing this by evaluating our system of pipes and replacing through improvement projects throughout the year.

Conserving our most precious resource

Altadena is a semi-desert area which depends on limited supplies of imported water to supplement the local water. Conservation is always important, especially during times of sub-normal rainfall. California has not recovered from multiple consecutive years of drought. On January 17, 2014 Governor Edmund G. Brown Jr. declared a drought state of emergency. California is facing water shortfalls and is in the driest year in recorded history. We ask that you please do your part in helping our community to continue to conserve our most precious resource. Remember, it is you that can make the greatest positive impact on our water supply by your continuous efforts to conserve water and prevent waste. For more information on how you can help conserve water and prevent water waste please visit our web site at www.rclwa.org or www.bewaterwise.com.

RCLWA provides potable drinking water via groundwater wells, a conventional treatment plant and from an imported source. The imported source water is obtained from Foothill Municipal Water District, a member agency of Metropolitan Water District of Southern California. Between the months of November through April, we do not operate our wells. We import water almost exclusively during this period since purchased water is historically more readily available during the winter months. During the remaining months we operate our wells as the primary source of potable drinking water. By pumping our wells during the summer months we can save operating costs. RCLWA's treatment plant treats water that is acquired from the local foothill area. In 2013, RCLWA pumped 2,105 acre-feet, and treated 122.75 acre-feet of water. An acre foot of water is equal to 325,851 gallons.

Water quality monitoring

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. In order to be certain that tap water is safe to drink, the USEPA and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

In 2013, RCLWA conducted thousands of water quality tests for more than 100 different contaminants. We test weekly, monthly, quarterly, annually, and every three years depending on the substance. All water quality samples are pulled by specially trained and state-certified operators and analyzed by state-certified independent laboratories. Once again, we are pleased to report the water delivered to your home or business complied with, or exceeded all State and Federal Drinking Water requirements. It is important that you know what was detected and how much of the substance was present in the water. For your information, the following tables have been compiled to show what substances were detected in RCLWA's water supplies during 2013. The State allows RCLWA to monitor some contaminants less than once per year due to the concentrations of these contaminants infrequent changes. Some data, though representative, are more than one year old.

People with sensitive immune systems

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. When ingested, the organism may cause nausea, diarrhea and other gastrointestinal symptoms. The organism comes from animal wastes and may be found in surface watersheds. Water purchased from Metropolitan Water District of Southern California via Foothill Municipal Water District was tested for Cryptosporidium in 2013 and it was not detected in the water. If detected, Cryptosporidium is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

Some people may be more vulnerable to constituents in the water than the general population. Immunocompromised people, such as those with cancer undergoing chemotherapy, persons with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk of infections. These people should seek advice from their healthcare provider about their drinking water.

The USEPA and the Centers for Disease Control have guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants, which are available through the USEPA's Safe Drinking Water Hotline at (800) 426-4791, and online at http://water.epa.gov/drink/hotline/.

Surface Water Quality Data

			RCLWA		*MWD* Purchased Water			
Parameter	**MCL**	**PHG (MCLG)**	**Average Amount**	**Range of Detection**	**Average Amount**	**Range of Detection**	**MCL Violations**	**Typical Source of Contaminant**
Radiological								
Alpha Radiation (pCi/L)	15	(0)	16	10 - 18	N/D	N/D	No	Erosion of natural deposits
Uranium (pCi/L)	20	(5)	18	0 – 20	2.0	1 – 2.0	No	Erosion of natural deposits
Inorganic Chemicals								
Aluminum (ug/L)	200	N/A	N/D	0 – 200	180	0 – 240	No	Residue from water treatment process
Arsenic (ug/L)	10	N/A	2.0	0 – 10	N/D	N/D	No	Erosion of natural deposits
Fluoride (mg/L) (A)	2	1	2.23 (A)	1.2 – 2.8	0.8	0.5 – 2.8	No	Erosion of natural deposits
Nitrate (mg/L as NO3)	45	45	3.5	3.2 – 5.8	.50	N/D	No	Erosion of natural deposits
Secondary Standards (B)								
Chloride (mg/L)	500	N/A	7.56 (B)	4.8 – 8.0	88 (B)	85 – 95	No	Runoff or leaching from natural deposits
Zinc (mg/L)	5	N/A	N/D (B)	N/D	N/D (B)	N/D	No	Runoff or leaching from natural deposits
Specific Conductance (us/cm)	1600	N/A	370 (B)	300 – 375	870 (B)	350 – 930	No	Substances that form ions in water
Sulfate (mg/L)	500	N/A	30 (B)	18 – 39	180 (B)	130 – 190	No	Runoff or leaching of natural deposits
Iron (ug/L)	300	N/A	N/D (B)	N/D	N/D (B)	N/D	No	Leaching from natural deposits
Manganese (ug/L)	50	N/A	N/D (B)	N/D – 3.0	N/D (B)	N/D	No	Leaching from natural deposits
Total Dissolved Solids (mg/L)	1000	N/A	220 (B)	200 – 250	530 (B)	450 – 550	No	Runoff or leaching of natural deposits

A) High Fluoride in local surface water is blended with groundwater to reduce Fluoride below the MCL. MCL compliance is determined by measuring Fluoride every week at a representative location within the distribution system. **B)** Parameter is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Unregulated Parameters Requiring Monitoring								
Sodium (mg/L)	N/A	N/A	16	14 – 19	82	74 – 82	No	Runoff or leaching from natural deposits
Hardness (mg/L)	N/A	N/A	163	140 – 170	240	80 – 270	No	Runoff or leaching from natural deposits
Perchlorate (ug/L)	6	0	N/D	N/D	N/D	N/D	No	Industrial waste discharge
Alkalinity (mg/L)	N/A	N/A	145	120 - 165	110	61 - 120	N/A	
Chromium vi (ug/L)	N/A	0.02	0.22	0 - 1	N/D	N/D	No	Industrial waste discharge
Turbidity – combined filter effluent		**Treatment Technique**	**Turbidity Measurement**		**Turbidity Measurement**		**TT Violations**	**Typical Source of Contaminate**
Highest Single Measurement		5.0 NTU	0.09 NTU		ND		No	Soil run-off
Percentage less than 0.5 NTU		95 %	100 %		100 %		No	Soil run-off

Disinfection By-Products							
Parameter	**MCL**	**Average Amount**	**Range of Detection**	**Average Amount**	**Range of Detection**	**MCL Violations**	**Typical Source of Contaminate**
Total Trihalomethanes (ug/L)	80	N/A	N/A	40	38 – 48	No	Byproducts of drinking water chlorination
Haloacetic Acids (five)(ug/L)	60	N/A	N/A	11	10 – 18	No	Byproducts of drinking water chlorination
Haloacetic Acids (five) system (ug/L)	60	N/A	N/A	18	7.6 – 70	No	Byproducts of drinking water chlorination
Chlorine Residual (mg/L)	4	2.2	1.4 – 2.7	2.3	1.4 – 2.8	No	
Haloketones	N/A	N/A	N/A	1.5	0.7 – 3.2	N/A	Formed by the reaction with chlorine disinfectant
Chloropicrin	N/A	N/A	N/A	N/D	N/D	N/A	Formed by the reaction with chlorine disinfectant
Chloral Hydrate	N/A	N/A	N/A	4.1	2.4 – 6.8	N/A	Formed by the reaction with chlorine disinfectant
Total Organic Halides	N/A	N/A	N/A	116	72 – 174	N/A	Formed by the reaction with chlorine disinfectant
Cyanogen Chloride	N/A	N/A	N/A	1.9	N/D – 3.1	N/A	Formed by the reaction with chlorine disinfectant

The Information Collection Rule (ICR) is a multi-year national program administered by the U.S. Environmental Protection Agency. The primary purpose of the ICR is to gather nationwide occurrence data on chemicals which may be formed during drinking water disinfection. The results of the ICR will assist the EPA in regulating many of these disinfection by-products over the next few years.

Groundwater Quality Data

Parameter	MCL	PHG (MCLG)	Average Amount	Range of Detection	MCL Violation	Most Recent Sample Date	Typical Source of Contaminant
Organic Chemicals							
Tetrachloroethylene (PCE) (ug/L)	5	(0)	0.125	0 - 5	No	2013	Discharge from factories, dry cleaners, and auto shops
MTBE (ug/L)	13	13	N/D	N/D	No	2013	Gasoline discharge from watercraft engines
Inorganic Chemicals							
Nitrate (as NO3) (mg/L)	45	45	18	15 – 30	No	2013	Erosion of natural deposits
Nitrate +Nitrite (mg/L as N)	10	N/A	5.7	3.5 – 6.5	No	2011	Erosion of natural deposits
Arsenic (ug/L)	10	N/A	N/D	N/D	No	2011	Erosion of natural deposits
Fluoride (mg/L)	2	1	0.69	0.50 – 0.75	No	2011	Erosion of natural deposits
Aluminum (ug/L)	1000	(50)	N/D	N/D	No	2011	Erosion of natural deposits
Secondary Standards*							
Chloride (mg/L)	500*	N/A	39	19 – 40	No	2011	Erosion of natural deposits
Specific Conductance (us/cm)	1600*	N/A	525	490 – 610	No	2011	Erosion of natural deposits
Sulfate (mg/L)	500*	N/A	55	48 – 83	No	2011	Erosion of natural deposits
Total Dissolved Solids (mg/L)	1000*	N/A	355	320 - 410	No	2011	Erosion of natural deposits

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

Unregulated Parameters Requiring Monitoring							
Parameter	MCL	PHG (MCLG)	Average Amount	Range of Detection	MCL Violation	Most Recent Sample Date	Typical Source of Contaminant
Perchlorate (ug/L)	6	6	N/D	N/D	No	2013	Industrial waste discharge
Sodium (mg/L)	Not Regulated	N/A	37	0 – 40	N/A	2011	Erosion of natural deposits
Hardness (mg/L)	Not Regulated	N/A	195	180 – 250	N/A	2011	Erosion of natural deposits
Boron (ug/L)	Not Regulated	N/A	65	0 – 70	N/A	2011	Runoff / leaching from natural deposits
Vanadium (ug/L)	Not Regulated	N/A	8.0	0 – 10	N/A	2011	Naturally occurring / Industrial waste discharge
Chromium VI (ug/L)	Not Regulated	0.02	0.85	0 - 5	N/A	2013	Industrial waste discharge

Parameter	Primary MCL	Average Amount	Range of Detection	MCL Violation	Typical Source of Contamination
Nitrate (as NO3) (mg/L)	45	18	5 – 20	No	Fertilizers, septic tanks
Fluoride (mg/L)*	2	0.87*	0.5 – 2.0	No	Naturally present in groundwater
Total Trihalomethanes (ug/L)	80	5.99	0 – 30	No	Byproducts of chlorine disinfection
Haloacetic Acids (five) (ug/L)	60	0.62	0 - 20	No	Byproducts of chlorine disinfection
Parameter	**Secondary MCL**	**Average Amount**	**Range of Detection**	**MCL Violation**	**Typical Source of Contaminant**
Color (color units)	15	< 3.0	0 – 7.5	No	Naturally present in groundwater
Odor (Threshold odor number)	3	1	N/D - 2	No	Naturally present in groundwater

Lead and Copper Action Level at Residential Taps						
Parameter	MCL	AL	90th Percentile Value	Sites Exceeding MCL , Number of Sites	MCL Violation	Typical Source of Contaminant
Copper (mg/L)	N/A	1.3	0.22	0 / 20	No	Corrosion of household plumbing
Every three years, 20 residences are tested for lead and copper at-the-tap. The most recent set of samples were collected in 2013. Next collection is scheduled for June 2016. Lead was not detected; copper was detected in twelve samples, none of which exceeded the Regulatory Action Level.						

Parameter	MCL	PHG (MCLG)	Average Amount	Range of Detection	MCL Violation	Most Recent Sample Date	Typical Source of Contaminant
Radiological							
Alpha Radiation (pCi/L)	15	(0)	7.3	4.0 – 15.7	No	2012	Erosion of natural deposits
Uranium (pCi/L)	20	(5)	8.5	1.4 – 14.5	No	2012	Erosion of natural deposits

What are some contaminants in my source water?

- Microbial contaminants, such as viruses and bacteria, can be naturally occurring or result from urban storm water runoff, sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

Additional information on drinking water contaminants

Nitrate - Found in groundwater through agricultural runoff and a by-product of leaking septic systems. Specifically, a naturally occurring chemical that is left after the break down or decomposition of animal or human waste. Nitrate in drinking water at levels above 45 ppm is a health risk for infants of less than six months of age as well as pregnant women, and those with certain specific enzyme deficiencies.

Perchlorate - Occurs both naturally and through manufacturing. A component found in rocket fuel and can be found in airbags, fireworks, and Chilean fertilizers. Both RCLWA and Metropolitan Water District had no detection of Perchlorate in 2013.

Chloramines - Chlorine has been safely used for more than 100 years for disinfection of drinking water to protect public health from diseases, which are caused by bacteria, viruses, and other disease causing organisms. Chloramine, the monochloramine form in particular, also has been used as a disinfectant since the 1930's. Chloramines are produced by combining Chlorine with Ammonia. While obviously toxic at high levels, neither poses any health concerns to humans at the levels used for drinking water disinfection. Chloramines are weaker disinfectants than Chlorine, but are more stable, thus extending disinfectant benefits throughout a water utility's distribution system. Chloramines are used for maintaining a disinfectant residual in the distribution system so that disinfected drinking water is kept safe.

Turbidity - Turbidity is a measurement of the cloudiness or haziness of water caused by individual particles (suspended solids) that are generally invisible to the naked eye, thus being much like smoke in air. Turbidity is generally caused by phytoplankton. Measurement of turbidity is a key test of water quality.

Total Trihalomethanes - Trihalomethanes (THM) are a group of four chemicals that are formed along with other disinfection byproducts when Chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The amount of total THM's allowed in drinking water is regulated by the USEPA. THM's are measured at two locations within our system. USEPA has set the total THM Running Annual Average safe limit at 80ug/L for drinking water.

Haloacetic Acids - Haloacetic acids (HAA5) are a group of five chemicals that are formed along with other disinfection byproducts when Chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The amount of total HAA5's allowed in drinking water is regulated by the USEPA. HAA5's are measured at two locations within our system. USEPA has set the total HAA5 Running Annual Average safe limit at 60ug/L for drinking water.

Color - When water is not circulated regularly it can pick up color from galvanized or copper pipes causing your water to turn yellow or brown. A rusty water heater can also be a problem. To remove colored water from household pipes, run faucet for at least five minutes or until the water clears. Catch this water in a pitcher for watering plants or other non-potable purposes. RCLWA has a flushing maintenance program to remove sediment from the distribution system.

Fluoride - Fluoride is a naturally occurring mineral found both in surface water (water from snowmelt, rivers, and streams) as well as groundwater. Fluoride has been added to U.S. drinking water supplies since 1945. While the MCL for Fluoride is set nationally at 4.0 mg/L, the California Department of Public Health (CDPH) has set the California MCL at 2.0mg/L. Compliance is achieved by blending canyon water with pumped groundwater or imported MWD water which, is lower in Fluoride, always reduces the Fluoride concentration below the CDPH MCL. Tests for Fluoride are conducted every week at a representative location within the distribution system.

Abbreviations and definitions

MCL - Maximum Contaminant Level **-** The highest level of a contaminant that is allowed in drinking water. Primary MCL's are set as close to the PHG's or MCLG's as is economically and technologically feasible. Secondary MCL's (SMCL) are set to protect the aesthetic qualities (color, taste, and odor) of drinking water.

MCLG - Maximum Contaminant Level Goal **-** The level of a contaminant in drinking water below which there are no known or expected risk to health. MCLG's are set by the U.S. Environmental Protection Agency (USEPA).

PHG - Public Health Goal – The level of a contaminant in drinking water below which there are no known or expected risk to health. PHG's are set by the U.S. Environmental Protection Agency (USEPA).

MRDL - Maximum Residual Disinfection Level **-** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

MRDLG - Maximum Residual Disinfection Level Goal – The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLG's are set by the U.S. Environmental Protection Agency (USEPA).

NL - Notification Level **-** Non-regulatory, health-based advisory levels established by the California Department of Public Health (CDPH) for contaminants in drinking water for which an MCL has not been established.

N/A - Not applicable

N/D - Not detected

PDWS - Primary Drinking Water Standard – MCL's and MRDL's for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

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

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

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