Apple Valley Ranchos Water Company 2013/2014

Consumer Confidence Report and Annual Water Quality Report

APPLE VALLEY RANCHOS
WATER COMPANY™

Apple Valley Ranchos Water Company is pleased to provide you with a copy of this year's Annual Water Quality Report. We have put together a series of articles that we hope will keep you better informed on water quality issues both in general and specific to what comes from your own tap. Please feel free to contact us should you ever have any questions about service or quality.

Apple Valley Ranchos Water Company (Ranchos Water) has faithfully served its customers for 67 years. In 2013 we provided 12,233 acre-feet of high-quality potable drinking water to over 60,000 residential and business customers. This equates to 4 billion gallons of water served over an area of approximately 50 square miles that encompasses approximately 81% of the Town of Apple Valley and portions of the surrounding area through a network of 465 miles of underground pipeline.

While we are currently experiencing low levels of growth within our system, we do not expect this to last. Historically growth has come in rapid bursts followed by periods of calm. We are using this time to perform hydraulic modeling of transmission mains to ensure an adequate supply of water for the next 25 years. We are also working on a study to improve flows to the Northern part of our system allowing the Town of Apple Valley to develop its much-anticipated Industrial Park.

Ranchos Water is constantly working to improve our service and guarantee that we have water to meet future demands. Several ways in which we are doing this is by following the suggestions of our Water Use Efficiency Plan, our Standard Water Audit Plan, and our Water Pumping Facility Maintenance programs.

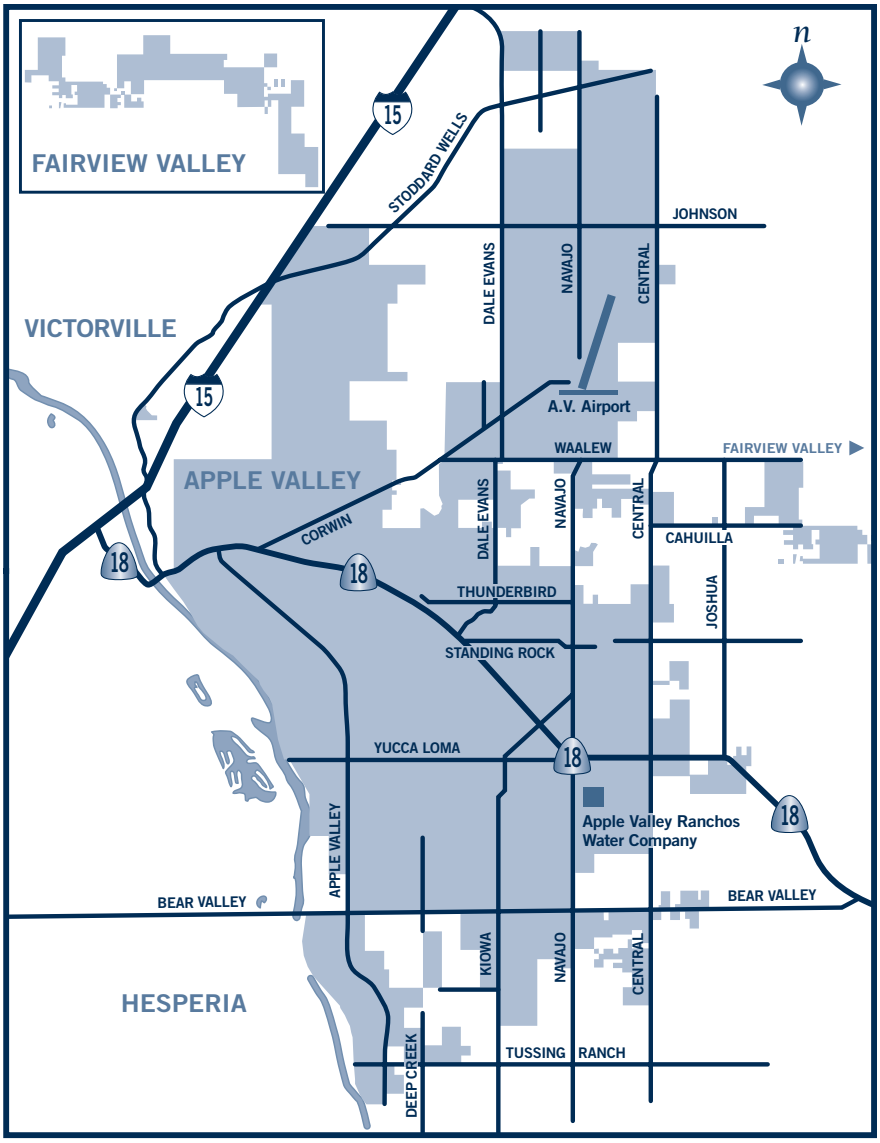
Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien.

Apple Valley Ranchos Water Company Sources

Ranchos Water pumps 100% of our source water from 20 deep wells located throughout the community. These wells draw water from the deep Alto subunit of the Mojave ground water basin. This high-quality aquifer is recharged from snowmelt from the San Bernardino Mountains to the south and the Mojave River to the west. Also, the Mojave Water Agency (MWA) imports water from the California State Water project to spread in the Mojave River to help recharge the ground water. Some of the water we pump has been age-dated close to 10,000 years old by the United States Geologic Survey. That means it has been protected and naturally filtered for a very long time.

Sensitive Populations May Be More Vulnerable

Some people may be more vulnerable to contaminants in drinking water than the general population. Persons with compromised immune systems such as those 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 provider. The EPA and the national Centers for Disease Control (CDC) have guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants. These are available by calling the Safe Drinking Water Hotline at 1-800-426-4791.



Apple Valley Ranchos Water Company service areas

What the EPA Says About the Kinds of Contaminants That Might Be Found in Drinking Water

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. In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The federal Food and Drug Administration (FDA) and CDPH regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants that may be present in untreated source water include:

- Microbial contaminants, such as viruses and bacteria that 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, that 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, and septic systems.
- Radioactive contaminants that can be naturally occurring or be the result of oil and gas productions and mining activities.

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. The tables in this report indicate which minerals and substances have been detected in the water provided by Ranchos Water. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 1-800-426-4791. You can also go to the following websites for more information:

EPA – www.epa.gov/safewater

CDPH – www.cdph.ca.gov/certlic/drinkingwater/Pages/default.aspx

What Are Drinking Water Standards?

Drinking water standards are regulations that the EPA sets to control the level of contaminants in the nation's drinking water. The EPA, the CDPH and the California Public Utilities Commission (CPUC) are the agencies responsible for establishing drinking water quality standards in California. These standards are part of the Safe Drinking Water Act's "multiple barrier" approach to drinking water protection, which includes assessing and protecting drinking water sources; protecting wells and surface water; making sure water is treated as needed by the appropriate treatment technology by qualified operators; ensuring the integrity of distribution systems; and making information available to the public on the quality of their drinking water. With the involvement of the EPA, the CDPH, the CPUC, drinking water utilities, communities and citizens, these multiple barriers ensure that tap water is safe to drink. The water delivered to your home meets standards required by the EPA, the CDPH and the CPUC. To recover the growing cost of meeting and maintaining EPA, CDPH and CPUC standards, Ranchos Water submits a General Rate Case to the CPUC every three years. The CPUC is responsible for establishing water rates for Ranchos Water.

If you would like more information about water quality, or to find out about upcoming opportunities to participate in public meetings, please call Jeff Kinnard at 760-247-9332, extension 4323.

This report describes those contaminants that have been detected in the analysis of almost 200 different potential contaminants, nearly 100 of which are regulated by the EPA and the CDPH. Ranchos Water is proud to tell you that there have been no contaminants detected that exceed any federal or state drinking water standards. Hundreds of samples analyzed every month and thousands every year by Ranchos Water contract-certified laboratories assure that all primary (health related) and secondary (aesthetic) drinking water standards are being met. See the tables on the following page to see how your water quality rates.

This report is intended to provide information for all water users. If received by an absentee landlord, a business, or a school, please share the information with tenants, employees or students. We will be happy to make additional copies of this report available. Complete records of water quality analyses are open for inspection by the public upon request. You may also access this report on the Ranchos Water web site at www.avrwater.com.

Source Water Assessment Completed and Available

The 1996 Safe Drinking Water Act amendments required states to perform an assessment of potentially contaminating activities near drinking water sources of all water utilities. In California, the CDPH required the utilities to perform the assessments themselves. Ranchos Water completed the Source Water Assessment in December of 2002. The assessment has been updated since for three new wells. Ranchos Water wells are considered most vulnerable to the following activities associated with potential contamination of ground water in Apple Valley: high density housing, high and low density septic systems, parks, irrigated crops, golf courses and sewer collection systems. Additional activities that are potentially vulnerable for our wells are: gas stations, roads, streets, railroads, storm water injection wells, storm drain discharge points, storm water detention facilities, agricultural and irrigation water wells, historic grazing, historic waste dumps and landfills, machine shops and leaking underground storage tanks.

A copy of the complete assessment is available at Apple Valley Ranchos Water Company and at the CDPH San Bernardino office. You may request a summary of the assessment be sent to you by contacting Jeff Kinnard of Ranchos Water at 760-247-6484 or by calling the CDPH office at 909-383-4328.

Issues to Know About

Lead and Copper While there have never been any problems with lead or copper at Ranchos Water, the EPA and the CDPH require the following information be presented in this report. 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. Ranchos Water 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 or at www.epa.gov/safewater/lead.

Boron In 2011, Ranchos Water detected the naturally occurring mineral Boron in a rarely used well that exceeds the CDPH Notification Level (NL). The NL for Boron is 1 milligram per liter (mg/L), or part per million (ppm). The level of Boron in this well in 2012 was 1.27 mg/L. Also in 2012, Ranchos Water detected and confirmed Boron above the NL in one additional well, at an average level of 1.5 mg/L. The health endpoint of concern is described by the CDPH as follows: "Non-cancer – decreased fetal weight (developmental) in rats." This is based on animal studies reviewed by the EPA. No known human health outcomes have been discovered, thus no drinking water standard currently exists for Boron. The CDPH **does not** recommend that Ranchos Water take any corrective action unless the level of Boron in these wells reaches ten times the NL, which would be 10 mg/L. Ranchos Water will continue to perform frequent monitoring of these wells for Boron in order to track any possible increases. The only action required by these findings was notification of the Apple Valley Town Council and Ranchos Water customers in this Consumer Confidence Report.

Arsenic While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic

from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Unregulated Contaminant Monitoring

The Safe Drinking Water Act requires the EPA to identify unregulated contaminants for potential regulation. Every five years, the EPA identifies a list of unregulated contaminants to be monitored for by the nation's water utilities over a three-year period. This is again occurring in 2013 - 2015. Ranchos Water will be monitoring for a total of 29 chemical contaminants from all of our wells spread out over the three years along with a corresponding sampling from the distribution system reflecting water from each well. Once the EPA has obtained this occurrence data nationally, they are required to determine if there is a meaningful opportunity for increased health protection of drinking water by regulating these contaminants. The findings from the first year of monitoring are reported in this year's Consumer Confidence Report.

WATER RESULTS

Apple Valley Ranchos Water Company
2013/2014 Annual Water Quality Report

Water Quality Parameters Detected in Apple Valley Ranchos Water Company Wells

PRIMARY STANDARDS – Mandatory (health related)	State MCL	PHG or (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR Wells (a)	AVR Date of last Measurement (b)	Potential Sources of Contamination
INORGANIC CHEMICALS							
Arsenic	10.0	0.004	ppb	<2 - 5.9	1.5	2011/12/13	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Beryllium	4	1	ppb	<1 - 1.9	<1	2011/12/13	Discharge from metal refineries, coal-burning factories, and electrical, aerospace, and defense industries
Fluoride	2.0	1.0	ppm	0.28 - 1.2	0.59	2011/12/13	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth (not added by Ranchos Water)
Nitrate (as NO3)	45	45	ppm	<2 - 24	5.8	2013	Erosion of natural deposits; runoff and leaching from fertilizer use; leaching from septic tanks and sewers
Nitrite/Nitrate (as N)	10	10	ppm	<0.4 - 5.45	1.3	2013	Erosion of natural deposits; runoff and leaching from fertilizer use; leaching from septic tanks and sewers
RADIONUCLIDES							
Gross Alpha	15	(0)	pCi/L	<3 - 5.63	ND	2005 - 2013	Erosion of natural deposits
Combined Radium (Radium 226 + 228)	5	(0)	pCi/L	<1 - 1.6	ND	2003 - 2009	Erosion of natural deposits
Uranium	20	0.43	pCi/L	<1 - 1.6	ND	2005 - 2013	Erosion of natural deposits
2013 LEAD AND COPPER MONITORING	**Action Level (AL)**	**PHG or (MCLG)**	**Units of Measurement**	**Number of Samples Collected**	**No. of Sites Exceeding Action Level**	**90th Percentile Level Detected**	**Potential Sources of Contamination**
Copper*	1.3	0.17	ppm	30	0	0.059	Internal corrosion of household water plumbing systems
Lead*	15	2	ppb	30	0	ND	Internal corrosion of household water plumbing systems

Water Quality Parameters Measured in the Distribution System

DISTRIBUTION SYSTEM	State MCL	PHG or (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR	AVR Date of last Measurement (b)	Potential Sources of Contamination
Chlorine residual	MRDL = 4	MRDLG = 4	ppm	0.1 - 1.5	0.57	weekly	Added for disinfection purposes
Heterotrophic Plate Count Bacteria	NS	none	CFU/ml	<1 - 120	2	weekly	Naturally present in the environment
Total Trihalomethanes (TTHMs)**	80	none	ppb	5.7 - 20	20	quarterly	By-product of drinking water disinfection
Turbidity	5	none	NTU	<0.1 - 0.26	<0.1	monthly	Soil runoff
Haloacetic Acids (HAA5)**	60	none	ppb	<1.0 - 1.8	0.13	quarterly	By-product of drinking water disinfection

SECONDARY STANDARDS Aesthetic standards (non-health related) **CHEMICAL PARAMETERS**	State MCL	PHG or (MCLG)	Units of Measurement	AVR Range (including highest value)	Average for AVR Wells (a)	AVR Date of last Measurement (b)	Potential Sources of Contamination
Chloride	500	none	ppm	5 - 260	25	2011/12/13	Runoff/leaching from natural deposits; seawater influence
Iron	300	none	ppb	<100 - 120	ND	2011/12/13	Leaching from natural deposits; industrial processes
Odor Threshold	3	none	units	<1 - 1	<1	2011/12/13	Naturally occurring organic materials
Specific Conductance	1,600	none	micromhos per centimeter	190 - 1400	341	2011/12/13	Substances that form ions when in water; seawater influence
Sulfate	500	none	ppm	9 - 230	45	2011/12/13	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	1,000	none	ppm	120 - 870	211	2011/12/13	Runoff/leaching from natural deposits
Turbidity/clarity	5.0	none	NTU	<0.1 - 0.5	<0.1	2011/12/13	Soil runoff

ADDITIONAL PARAMETERS – unregulated	DETECTED UNREGULATED CHEMICALS THAT MAY BE OF INTEREST TO CONSUMERS					
Aggressiveness Index (c)	NS	none	units	11 - 12	11.6	2011/12/13
Alkalinity (as Ca CO3)	NS	none	ppm	45 - 100	73	2011/12/13
Boron	NS	NL = 1,000	ppb	<100 - 1600	134	2012
Calcium	NS	none	ppm	12 - 110	27	2011/12/13
Corrosivity (Langelier Index) (d)	Non-corrosive	none	positive/ negative	(-0.68) - (+0.22)	-0.10	2011/12/13
Hardness (Ca CO3)	NS	none	ppm	24 - 390	85	2011/12/13
Hardness (grains)	NS	none	grains	1.2 - 28	4.6	2011/12/13
Hexavalent Chromium	NS	none	ppb	<1 - 5.4	2	2011
Magnesium	NS	none	ppm	1.2 - 28	4.6	2011/12/13
pH	6.5-8.5	none	units	7.4 - 8.5	8	2011/12/13
Potassium	NS	none	ppm	<1 - 4.2	1.4	2011/12/13
Sodium	NS	none	ppm	14 - 130	36	2011/12/13

THIRD UNREGULATED CONTAMINANT MONITORING REGULATION (UCMR3) 6 wells monitored in 2013 **CHEMICAL PARAMETERS**	State MCL/ PHG or (MCLG)	Units of Measurement	Entry Point Range (including highest value)	Entry Point Average for Wells	Distribution System Range	Distribution System Average
Chromium, Total	NS	ppb	0.4 - 3.6	2.5	0.23 - 4.6	2.2
Chromium, Hexavalent	NS	ppb	0.61 - 4.4	3.1	0.42 - 5.4	2.8
Molybdenum	NS	ppb	<1 -3.5	1.6	<1 - 11	3.35
Strontium	NS	ppb	<0.3 - 1400	499	320 - 950	483
Vanadium	NS	ppb	4.2 - 33	16	3.6 - 35	13
Chlorate	NS	ppb	<20 - 240	53	<20 - 48	ND
1,4-Dioxane	NS	ppb	<0.07 - 0.20	ND	<0.07	ND
1,1-Dichloroethane	NS	ppb	<0.03 - 0.087	ND	<0.03	ND
Chlorodifluoromethane	NS	ppb	<0.08 - 0.73	0.12	<0.08	ND

Key To Abbreviations and Footnotes

MCL = Maximum Contaminant Level, a drinking water standard
MCLG = Maximum Contaminant Level Goal
AL = Action Level
ND = Not detected
NL = Notification Level
NS = No Standard
NA = Not Applicable at this time or not required to analyze for
NTU = Nephelometric Turbidity Units. This is a measure of the suspended material in water
CFU/mL = colony forming units per milliliter
ppm = parts per million or milligrams per liter
ppb = parts per billion or micrograms per liter
pCi/L = picoCuries per liter
< = less than (essentially equivalent to ND)
= a secondary (aesthetic) drinking water standard
= Unregulated contaminant monitoring helps EPA and the DPH to determine where certain contaminants occur and whether the contaminants need to be regulated. Boron, Hexavalent chromium and vanadium were monitored as part of the federal and state Unregulated Contaminant Monitoring Regulations.
* = Lead and Copper are regulated as a Treatment Technique (TT) under the Lead and Copper Rule. It requires water systems to take samples at "most vulnerable" consumer taps every three years and treatment steps must be taken if more than 10% of tap samples exceed the AL. Ranchos Water has not exceeded this level.
** = Average value reported is highest quarterly value of the four quarters sampled

(a) = The average is weighted according to the individual contribution in pumping by each well to the total (active wells only)
(b) = The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants in groundwater sources do not change frequently. Some of our data, though representative, are more than one year old.
(c) = An aggressiveness index of 11 or greater indicates that the water is not aggressive (noncorrosive)
(d) = A positive number Langelier Index indicates that the water is noncorrosive

Definitions

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.

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 EPA.

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.

Maximum Residual Disinfectant Level Goal (MRDLG): The 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.

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

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

Secondary Drinking Water Standard: Requirements that ensure that appearance, taste and smell of drinking water are acceptable.

Notification Level (NL): The concentration of a contaminant that, if exceeded, triggers notification to local political jurisdictions and customers.

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