

# **ANTELOPE VALLEY – EAST KERN WATER AGENCY**

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**2023 ANNUAL WATER QUALITY REPORT**

***KERN COUNTY SYSTEM***

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A PUBLIC AGENCY

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March 4, 2024

Dear General Manager:

This is the 2023 Annual Water Quality Report from the Antelope Valley-East Kern Water Agency (AVEK). Since the water you obtain from AVEK represents one of your sources of water, we have included a summary of results for all analyses completed in 2023 for your convenience. If you find that you need copies of individual monitoring reports please feel free to contact me and I will be happy to provide those for you.

The AVEK Rosamond Water Treatment Plant was operating the majority of 2023. While the treatment plant was offline, water from our Westside Water Bank well field was delivered to our Kern County customers.

In accordance with the Consumer Confidence Report (CCR) guidance manuals issued by the State Water Resources Control Board and the United States Environmental Protection Agency, we are herein providing you with the monitoring data and other information you will need to produce your CCR.

If you have any questions or need additional information, please call me at 661-943-3201. However, please do not designate AVEK or this office as your contact in your CCR. According to the State Board and EPA guidelines, the designated contact person should be someone from your system. While we are always happy to clarify questions about AVEK water, we do not have the specific information necessary to answer questions about your water, blending practices or distribution systems.

Respectfully,

A handwritten signature in blue ink, appearing to read "Jordan Wray".

Jordan Wray  
Laboratory Director

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(661) 943-3201 • [www.avek.org](http://www.avek.org) • [info@avek.org](mailto:info@avek.org)

*The mission of AVEK is to deliver reliable, sustainable and high quality supplemental water to the region in a cost-effective and efficient manner.*

# ***Antelope Valley-East Kern Water Agency***

## **2023 Annual Water Quality Report**

We are pleased to provide you with this year's Annual Water Quality Report. We want to keep you informed about the excellent water we have delivered to you over the past year. Our goal is, and always has been, to provide to you a safe supply of drinking water.

Our main water source is the State Water Project, California Aqueduct. The State Water Resources Control Board (State Board) has assessed the vulnerability of the State Water Project as to possible contaminating activities. The assessment's description and discussion of vulnerability is as follows:

“The California Aqueduct originates at the Sacramento-San Joaquin Delta at Clifton Court Forebay. Water in the Delta originates in the Sacramento River watershed, the San Joaquin watershed, and the watershed drainage from the Mokelumne River, Stanislaus River, Merced River and several smaller rivers that drain the eastern slopes of the Sierra Nevadas. Located in these drainage areas are a broad variety of potential sources of contamination including municipal, industrial and agricultural activities. Also influencing the quality of water pumped from the Delta is the impact of the estuarial nature of the Delta and the naturally occurring salt-water intrusion which is dependent to a large extent on the inflow from the contributing rivers.

The possible contaminating activities present within the California Aqueduct watershed are described in the State Water Project Watershed Sanitary Survey conducted by the California Department of Water Resources and their consultants in 1990 and updated in 2021.”

Our alternative water source is State Water Project water which has been stored in the aquifer at various underground storage facilities (i.e. “water banks”) and is recovered for water quality purposes or supply purposes during times of drought. The vulnerability of the facilities was assessed in 2014 as follows:

“The wells are most vulnerable to contaminants from activities such as herbicide use along transportation corridors or road right-of-ways; agricultural/irrigation wells; irrigated crops; application of fertilizer, pesticides, and herbicides; agricultural drainage; and the raw State Water Project surface water used to recharge the groundwater basins. Other potential contaminating activities include the potential presence of certain unknown activities such as unregistered underground storage tanks.”

A copy of these assessments may be viewed at, Antelope Valley-East Kern Water Agency, 6450 West Avenue N, Palmdale, CA 93551.

If you have any questions about this report or the Antelope Valley-East Kern Water Agency, please contact Jordan Wray, Laboratory Director at 661-943-3201. We want our valued customers to be informed about our Water Agency. If you want to learn more, please attend any of our regularly scheduled Board meetings. They are held on the second and fourth Tuesday of every month, 5:30 PM, at the Antelope Valley-East Kern Water Agency Office, 6450 West Avenue N, Palmdale, CA, 93551.

Antelope Valley-East Kern Water Agency routinely monitors for contaminants in our drinking water according to Federal and State laws. The table in this report, “2023 Annual Water Quality Report”, shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2023.

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at 1-800-426-4791.

We have learned through our monitoring and testing that some contaminants have been detected, however, we are proud to report that our drinking water meets all State and Federal requirements.

**Total Coliform:** Water systems are required to meet a strict standard for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If the standard is exceeded, the water supplier must notify the public by newspaper, television or radio.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/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 (800-426-4791).

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The Antelope Valley-East Kern Water Agency provides treated surface water and treated groundwater as our sources of drinking water.

Treatment technique: Conventional

EPA Turbidity Performance Standards: Turbidity of the filtered water must:

1. Be less than or equal to 0.30 NTU in 95% of measurements in a month.
2. Not exceed 1 NTU at any time.

Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1: **100%**

Highest single turbidity measurement during the year: **0.17 NTU**

Percentage of samples < 0.30 NTU: **100%**

The number of violations of any surface water treatment requirements: **NONE**

Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

The Antelope Valley-East Kern Water Agency also provides chlorinated groundwater as an alternative source of drinking water.

Treatment technique: Chlorination

EPA Groundwater Rule: AVEK meets the requirements of the Groundwater Rule by providing a minimum of 4-log reduction of viruses by continuously providing a minimum free chlorine residual of 0.5 mg/L leaving the clearwell.

Lowest single free chlorine residual measurement during the year: **0.78**

Number of violations of the Groundwater Rule: **NONE**

**MICROBIOLOGICAL CONTAMINANTS**

Type of Sample(s)	Parameter	Sampling Frequency	MCL	No. of Months in Violation	System Results	
					Range	Average
Distribution	Total Coliform Bacteria	52 - 70 / mo	5% positive	None	0%	0%
Distribution	E. coli	52 - 70 / mo	1 pos. with 2 TC pos.	None	0%	0%

**INORGANIC CONTAMINANTS**

Parameter	Units	MCL	DLR	PHG	RESULTS							
					Rosamond Plant				Water Bank			
					Plant Effluent (CWR)		Raw Influent (Sources)		Effluent (CWR)		Wells	
Range	Average	Range	Average	Range	Average	Range	Average					
Aluminum	µg/L	1000	50	600	ND-74	32	ND	ND				
Antimony	µg/L	6	6	1		ND	ND	ND				
Arsenic	µg/L	10	2	0.004	1.7-8.2	5.0	2.1-10	5.0	3.7-7.6	5.7	2.4-17	4.6
Barium	µg/L	1000	100	2000		ND	ND	ND				
Beryllium	µg/L	4	1	1		ND	ND	ND				
Cadmium	µg/L	5	1	0.04		ND	ND	ND				
Chromium (Total)	µg/L	50	10			ND	ND-16	7.5				
Chromium (Hexavalent)	µg/L	*	1	0.02	ND-4.7	2.4		ND				
Cyanide	µg/L	150	100	150		ND	ND	ND				
Fluoride	mg/L	2	0.1	1		ND	ND-0.39	0.21				
Mercury	µg/L	2	1	1.2		ND	ND	ND				
Nickel	µg/L	100	10	12		ND	ND	ND				
Nitrate (as N)	mg/L	10	0.4	10		0.59	ND-2.1	1.2			2.6-2.9	2.8
Nitrite (as N)	mg/L	1	0.4	1		ND	ND	ND			ND	ND
Nitrate+Nitrite (as N)	mg/L	10		10		0.59	ND-2.1	1.2			1.5-3.4	2.2
Perchlorate	µg/L	6	1	1		ND	ND	ND			ND	ND
Selenium	µg/L	50	5	30		ND	ND	ND				
Thallium	µg/L	2	1	0.1		ND	ND	ND				

\*There is currently no MCL for hexavalent chromium. The previous MCL of 0.010 mg/L was withdrawn on September 11, 2017.

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**GENERAL PHYSICAL AND SECONDARY STANDARDS**

Parameter	Units	MCL	DLR	RESULTS					
				Rosamond Plant		Water Bank			
				Plant Effluent (CWR)	Raw Influent (Sources)	Effluent (CWR)	Wells		
				Range	Average	Range	Average		
Aluminum	µg/L	1000	50	ND-74	32	ND	ND		
Calcium	mg/L	no standard			31	15-44	26		
Chloride	mg/L	250			46	36-68	47		
Color	Units	15		<5	<5	<5-15	5	<5	<5
Copper	µg/L	1000	50		ND	ND	ND		
Foaming Agents (MBAS)	mg/L	0.5			ND	ND	ND		
Hardness (Total) as CaCO3	mg/L	no standard			110	64-160	110		
Iron	µg/L	300	100		ND	ND	ND		
Magnesium	mg/L	no standard			8.0	3.7-12	7.8		
Manganese	µg/L	50	20		ND	ND	ND		
Odor @ 60 C	Units	3	1	<1	<1	<1-1	1	<1	<1
pH	Units	no standard		6.5-8.1	7.3	7.4-9.4	8.2	7.7	7.7
Silver	µg/L	100	10		ND	ND	ND		
Sodium	mg/L	no standard			34	26-50	40		
Specific Conductance	µmhos	900		390-460	420	280-580	390	460	460
Sulfate	mg/L	250	0.5		42	16-75	44		
Thiobencarb (Bolero)	µg/L	1	1		ND	ND	ND		
Methyl tert-Butyl Ether (MTBE)	µg/L	5	RAR		ND	ND	ND		
Total Dissolved Solids	mg/L	500			210	150-360	250		
Turbidity	Units	5		0.01-0.17	0.06	0.02-11.7	2.40	0.15-0.25	0.20
Zinc	µg/L	5000	50		360	ND	ND		
Total Alkalinity (as CaCO3)	mg/L	no standard			72	65	65-99		
Bicarbonate Alkalinity(as HCO3)	mg/L	no standard			72		65		
Carbonate (as CO3)	mg/L	no standard			ND		ND		
Hydroxide (as OH)	mg/L	no standard			ND		ND		

**RADIOLOGICAL CONTAMINANTS**

Parameter	Units	MCL	DLR	PHG	RESULTS				
					Rosamond Plant		Water Bank		
					Raw Influent Sources		Wells		
					Range	Average	Range	Average	
Gross Alpha	pCi/L	15	3			ND			
Gross Beta	pCi/L	50	4			ND			
Strontium 90	pCi/L	8	2	0.35					
Tritium	pCi/L	20,000	1,000	400					
Uranium	pCi/L	20		0.43					
Radium 228	pCi/L		1	0.019					
Radium 226	pCi/L		1	0.05					

**VOLATILE ORGANIC CONTAMINANTS**

Parameter	Units	MCL	DLR	PHG	RESULTS			
					Rosamond Plant		Water Bank	
					Raw Influent (Sources)		Wells	
					Range	Average	Range	Average
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	200	0.5	1000	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	0.1	ND	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	5	0.5	0.3	ND	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	µg/L	5	0.5	3	ND	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	µg/L	6	0.5	10	ND	ND	ND	ND
1,2,4-Trichlorobenzene	µg/L	5	0.5	5	ND	ND	ND	ND
1,2-Dichlorobenzene (o-DCB)	µg/L	600	0.5	600	ND	ND	ND	ND

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Parameter	Units	MCL	DLR	PHG	Rosamond Plant Raw Influent (Sources)		Water Bank Wells	
					Range	Average	Range	Average
1,2-Dichloroethane (1,2-DCA)	µg/L	0.5	0.5	0.4	ND	ND	ND	ND
1,2-Dichloropropane	µg/L	5	0.5	0.5	ND	ND	ND	ND
1,3-Dichloropropene (Total)	µg/L	0.5	0.5	0.2	ND	ND	ND	ND
1,4-Dichlorobenzene (p-DCB)	µg/L	5	0.5	6	ND	ND	ND	ND
Benzene	µg/L	1	0.5	0.15	ND	ND	ND	ND
Carbon tetrachloride	µg/L	0.5	0.5	0.1	ND	ND	ND	ND
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	6	0.5	100	ND	ND	ND	ND
cis-1,3-Dichloropropene	µg/L				ND	ND	ND	ND
Dichloromethane (Methylene Chloride)	µg/L	5	0.5	4	ND	ND	ND	ND
Ethylbenzene	µg/L	300	0.5	300	ND	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	µg/L	13	3	13	ND	ND	ND	ND
Monochlorobenzene (Chlorobenzene)	µg/L	70	0.5	70	ND	ND	ND	ND
Styrene	µg/L	100	0.5	0.5	ND	ND	ND	ND
Tetrachloroethylene (PCE)	µg/L	5	0.5	0.06	ND	ND	ND	ND
Toluene	µg/L	150	0.5	150	ND	ND	ND	ND
trans-1,2-Dichloroethylene (t-1,2-DCE)	µg/L	10	0.5	60	ND	ND	ND	ND
trans-1,3-Dichloropropene	µg/L				ND	ND	ND	ND
Trichloroethylene (TCE)	µg/L	5	0.5	1.7	ND	ND	ND	ND
Trichlorofluoromethane (Freon11)	µg/L	150	5	1300	ND	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	µg/L	1200	10	4000	ND	ND	ND	ND
Vinyl Chloride (VC)	µg/L	0.5	0.5	0.05	ND	ND	ND	ND
Xylenes (Total)	µg/L	1750	0.5	1800	ND	ND	ND	ND

SYNTHETIC ORGANIC CHEMICALS

**RESULTS**

Parameter	Units	MCL	DLR (DL)	PHG	Raw Influent (Sources)		Water Bank Wells	
					Range	Average	Range	Average
Alachlor	µg/L	2	1	4			ND	ND
Atrazine	µg/L	1	0.5	0.15			ND	ND
Bentazon	µg/L	18	2	200			ND	ND
Benzo(a)pyrene	µg/L	0.2	0.1	0.007			ND	ND
Carbofuran	µg/L	18	5	0.7			ND	ND
Chlordane	µg/L	0.1	0.1	0.03			ND	ND
2,4-D	µg/L	70	10	20			ND	ND
Dalapon	µg/L	200	10	790			ND	ND
Dibromochloropropane (DBCP)	µg/L	0.2	0.01	0.0017			ND	ND
Di(2-ethylhexyl)adipate	µg/L	400	5	200			ND	ND
Di(2-ethylhexyl)phthalate	µg/L	4	3	12			ND	ND
Dinoseb	µg/L	7	2	14			ND	ND
Diquat	µg/L	20	4	6			ND	ND
Endothall	µg/L	100	45	94			ND	ND
Endrin	µg/L	2	0.1	0.3			ND	ND
Ethylene Dibromide (EDB)	µg/L	0.05	0.02	0.01			ND	ND
Glyphosate	µg/L	700	25	900			ND	ND
Heptachlor	µg/L	0.01	0.01	0.008			ND	ND
Heptachlor Epoxide	µg/L	0.01	0.01	0.006			ND	ND
Hexachlorobenzene	µg/L	1	0.5	0.03			ND	ND
Hexachlorocyclopentadiene	µg/L	50	1	2			ND	ND
Lindane	µg/L	0.2	0.2	0.032			ND	ND
Methoxychlor	µg/L	30	10	0.09			ND	ND
Molinate	µg/L	20	2	1			ND	ND
Oxamyl	µg/L	50	20	26			ND	ND
Pentachlorophenol	µg/L	1	0.2	0.3			ND	ND
Picloram	µg/L	500	1	166			ND	ND

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Parameter	Units	MCL	DLR (DL)	PHG	Raw Influent (Sources)		Water Bank Wells	
					Range	Average	Range	Average
Polychlorinated Biphenyls	µg/L	0.5	0.5	0.09			ND	ND
Simazine	µg/L	4	1	4			ND	ND
Thiobencarb (Bolero)	µg/L	70	1	42			ND	ND
Toxaphene	µg/L	3	1	0.03			ND	ND
2,3,7,8-TCDD (Dioxin)	pg/L	30	5	0.05			ND	ND
2,4,5-TP (Silvex)	µg/L	50	1	3			ND	ND
1,2,3-Trichloropropane	µg/L	0.005	0.005	0.0007			ND	ND

**DISINFECTION RESIDUAL, PRECURSORS, and BYPRODUCTS**

Type of Sample(s)	Parameter	Units	MCL/MRDL	DLR	MRDLG	RESULTS	
						Range	Average
Distribution	Chlorine (as total Cl <sub>2</sub> )	mg/L	4.0**		4	0.01 -1.52	1.01
Treated Water	Total Organic Carbon (TOC)	mg/L	Treatment Requirement	0.3		0.7 - 4.2	2.0
Source Water	Total Organic Carbon (TOC)	mg/L	Treatment Requirement	0.3		0.8 - 4.7	2.9
Distribution	Stage 2 D/DBP Rule Total Trihalomethanes	µg/L	80**	0.5		14 - 99	46 #
Distribution	Stage 2 D/DBP Rule Total Haloacetic Acids	µg/L	60**	0.5		ND - 30	11 #
Treated Water	Bromate	µg/L	10*	1.0		ND - 4.2	0.4

\*\* Running Annual Average of distribution system samples. The MCLs are based upon Running Annual Averages.  
 Stage 2 D/DBP Rule Total THMs and Total HAAs compliance is based upon Locational Running Annual Averages.

# Location with the highest TTHM average

\* Compliance is based on the running annual average computed quarterly, of monthly samples, collected at the entrance to the distribution system.

**DEFINITIONS and FOOTNOTES:**

Plant Effluent, CWR, is finished, treated drinking water.

Raw Water is the Source Water, the California Aqueduct or wells, prior to treatment.

**Units:** mg/L = milligrams per liter, parts per million (ppm)

µg/L = micrograms per liter, parts per billion (ppb)

pg/L = picograms per liter, parts per quadrillion (ppq)

µmhos = micromhos, a measure of specific conductance

pCi/L = pico Curies per liter

< = less than

> = greater than

ND = none detected above the DLR

NTU = nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**MCL:** Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set by the US Environmental Protection Agency or the State Water Resources Control Board as close to the PHGs and MCLGs as is economically or technologically feasible.

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

**DLR:** Detection Limit for purposes of Reporting.

**(DL):** Detection limit determined by the Laboratory when no DLR has been established.

**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 U.S. Environmental Protection Agency.

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

**PHG:** Public Health Goal. 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 Office of Environmental Health Hazard

**Primary Drinking Water Standard:** Primary MCLs, specific treatment techniques adopted in lieu of primary MCLs, and monitoring and reporting requirements for MCLs that are specified in regulations. Assessment.

**Secondary Standards:** Aesthetic standards established by the State Water Resources Control Board.

All analyses performed by ELAP certified laboratories: AVEK Water Agency, Eurofins Eaton Analytical Laboratories, or Eurofins subcontract lab.