City of Escondido
2016 Consumer Confidence Report

Escondido-Vista Irrigation District (VID) Water Treatment Plant

The City of Escondido Utilities Department (City) is pleased to provide you with this year's Consumer Confidence Report. This report is to inform you about the quality of water that is delivered to you every day. **During 2016, the City of Escondido's drinking water met or exceeded all state and federal government drinking water standards.**

Over the many years that the City and the Rincon del Diablo Municipal Water District (Rincon) have served the greater Escondido community, geographic characteristics of the area have led to unique agency boundaries. With existing water exchange agreements between the two agencies, some customers of one agency may be provided water originating from the other. This report focuses on water that is treated by the City of Escondido. Those customers serviced by Rincon will receive a Consumer Confidence Report directly from that agency. If you have any questions regarding your water source, please contact the agency that regularly bills you for water service.

Where Does My Water Come From?

The City of Escondido uses two sources for drinking water. The first source is water purchased from the San Diego County Water Authority (SDCWA). The Water Authority in turn purchases a majority of its water from the Metropolitan Water District of Southern California (MWD), which imports its water from the Colorado River Aqueduct and from Northern California via the State Water Project. Large water utilities are required by the State Water Board to conduct an initial source water assessment, which is then updated through watershed sanitary surveys every five years. Watershed sanitary surveys examine possible sources of drinking water contamination and recommend actions to better protect these source waters. The most recent surveys for Metropolitan's source waters are the Colorado River Watershed Sanitary Survey – 2015 Update, and the State Water Project Watershed Sanitary Survey – 2011 Update.

The second is local water, which originates from the watershed and well fields near Lake Henshaw. This water is transferred to Lake Wohlford via an open canal. The City prepared a Sanitary Survey Update of the local watershed in 2016. A copy of the Watershed Sanitary Survey Update is available for review online on the Utilities Department home page at www.escondido.org.

While the survey identifies a number of activities that have the potential to adversely affect water quality, including residential septic facilities, urban runoff, and agricultural and recreational activities, no contaminants from these activities were detected in the local water supply.

All water, regardless of source, is treated at the Escondido-VID Water Treatment Plant. The treatment of water includes filtration and disinfection to ensure destruction of harmful organisms. After chemical treatment and removal of organic components and suspended materials, the water is further filtered and is distributed from the Escondido-Vista Water Treatment Plant to the Vista Irrigation District and throughout Escondido via a system of pipelines and reservoirs.

Escondido - VID Water Treatment Plant

The Water Treatment Plant's On-Site Chlorine Generation Project is nearing completion. This complicated construction project broke ground in 2015, and includes the addition of tanks and equipment that will enable the plant to produce its own bleach for disinfecting potable water.

Due to the increase in rain that Southern California has experienced over the past year, our local water supply has been somewhat replenished. This helps insulate Escondido against future drought conditions, and provides access to a more affordable water supply. Providing safe drinking water at an economical cost continues to be a priority for the City of Escondido.

The tables shown in this report list all of the regulated drinking water contaminants that were detected during calendar year 2016, and unless otherwise noted, the data presented in the tables is also from testing done in calendar year 2016. The presence of "contaminants" in the water does not necessarily indicate that the water poses a health risk. The United States Environmental Protection Agency (US EPA) or the State requires that monitoring for certain contaminants occur less than once per year because the concentrations of these contaminants do not change frequently.

Potable Water

Since your water comes from a natural source and has met the federal and state standards, it is considered safe or "potable" (rhymes with floatable). In accordance with state regulations, your drinking water is routinely monitored for numerous contaminants. These contaminants include inorganic contaminants, lead, copper, nitrates, volatile contaminants, synthetic organic contaminants, disinfection by-products, and microbiological contaminants.

Water Fluoridation

The State of California requires that water agencies serving more than 10,000 customers fluoridate their drinking water supplies. Our water system treats your water by adding fluoride to the naturally occurring level in order to help prevent dental decay in consumers. The fluoride levels in the treated water are maintained within a range of 0.7-1.3 ppm as required by the California Department of Public Health.

EPA's Safe Drinking Water Hotline

All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily pose a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons 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 from their health care providers about their drinking water. US EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants, and any potential health effects, are available from the **Safe Drinking Water Hotline at 1-800-426-4791 or online at *www.epa.gov/safewater*.**

State TCR (Total Coliform Rule) and Federal RTCR (Revised Total Coliform Rule)

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems are required to comply with the state Total Coliform Rule. Beginning April 1, 2016, all water systems are also required to comply with the federal Revised Total Coliform Rule. The new federal rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The US EPA anticipates greater public health protection as the new rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system.

Foot Notes

(a) Data shown are annual averages and ranges.

(b) Tests are performed on drinking water turbidity (clarity) at the Water Treatment Plant (WTP) and in the distribution system. The turbidity tests are done continuously at the WTP. In addition, samples are taken each week at various points in the distribution system. This table reflects the clarity or turbidity produced at the WTP and in the distribution system.

(c) The turbidity level of the filtered water 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 at any time.

(d) Total coliform MCLs: No more than 5% of the monthly samples may be total coliform positive.

(e) The City of Escondido Water Distribution System consists of approximately 440 miles of pipelines. Tests are performed each week at various points along the system for compliance with bacteriological and physical parameters. Of concern to all customers is the bacteriological quality of the drinking water. The distribution system table indicates the amount of positive samples found in the system.

(f) Calculated from the average of quarterly samples.

(g) The Federal and State standards for lead and copper are Action Levels. If the Action Levels are exceeded, treatment may be required. The data is 90th percentile contaminant (lead/copper) level.

(h) This table shows the levels of copper and lead found in the homes of selected customers. The Copper Lead Rule requires the collection of special samples from designated residents every three years. The amount of lead and copper found in the samples is an indication of the degree of leaching within the customer-owned copper plumbing and brass faucets. 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 Escondido 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 the 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) 426-4791 or online at *http://www.epa.gov/safewater/lead.***

Abbreviations Key

AL	**Regulatory Action Level**: The concentration of a contaminant, which if exceeded, triggers treatment or other requirements.
CFU	**Colony-Forming Units**
D/DBPR	**Disinfectants/Disinfection Byproducts Rule**
DLR	**Detection Limit for Reporting**: A contaminant detected at or above its detection level for purposes of reporting.
DSYS	**Distribution System**
EPTD	**Entry Point To Distribution**
LRAA	**Locational Running Annual Average**
MCL	**Maximum Contaminant Level**: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to PHGs, MRDLGs, and maximum contaminant level goals as economically or technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
MCLG	**Maximum Contaminant Level Goal**: 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 EPA.
MRDL	**Maximum Residual Disinfection Limit**: The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
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. MRDLs are set by the US EPA.
mg/L	**Milligrams Per Liter**: Parts per million (ppm).
N/A	**Not Applicable**.
ND	**None Detected**: Parameters for detection limits available upon request.
ng/L	**Nanograms Per Liter**: Parts per trillion (ppt).
NL	**Notification Level.**
NTU	**Nephelometric Turbidity Units**: A measure of the cloudiness in water. It is a good indicator of the effectiveness of the WTP and distribution system.
pCi/L	**PicoCuries Per Liter**: A measure of radioactivity.
PDWS	**Primary Drinking Water Standard**: MCLs for contaminants that affect health, along with their monitoring and reporting requirements, and water treatment requirements.
PHG	**Public Health Goal**: The level of a contaminant in drinking water below which there is no known or expected risk to health. PGHs are set by the *California EPA*.
RAA	**Running Annual Average**
SI	**Saturation Index** (Langelier).
TT	**Treatment Technique**: A required process intended to reduce the level of a contaminant in drinking water.
ug/L	**Micrograms Per Liter**: Parts per billion (ppb).
umho/cm	**Micromhos Per Centimeter**: A measure of a substance's ability to convey electricity.
UCMR3	**Unregulated Contaminant Monitoring Rules 3**
WTP	**Water Treatment Plant**

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On April 7th, the Governor officially ended the drought emergency in the San Diego region and most of California. While the drought may be over for now, we know there will be dry years in our future, so the time is right to return our focus to Making Water Conservation a California Way of Life.

To do that, look for ways to eliminate water waste at home or at work such as:

- Fixing indoor and outdoor leaks and breaks as soon as they are discovered
- Upgrading to an efficient irrigation system that keeps water on your plants, not the street

If you've already made a switch to a WaterSmart landscape, learn how to maintain your yard with the new guide at www.bewaterwise.com.

Get suggestions for other ways YOU can make smarter water use choices, and review the City's conservation rules at www.escondido.org/water-conservation.aspx.

Hard Water

Water is considered "hard" when two non-toxic minerals, calcium and magnesium, are present in water in substantial amounts. The term "hard" refers to the difficulty of getting soap to lather when used with this water. You may see the effects of hardness around your kitchen and bathrooms. Hardness is the cause for white scaling in tea kettles and on shower heads and faucets. In some instances, water-related appliances (e.g., dishwashers, water heaters, etc.) may be affected by the level of hardness. When this is the case, the manufacturer of the appliance may ask you to verify the level of hardness in your water. **In 2016, hardness ranged from 14.0—17.5 grains/gallon.**

Water Taste and Smell

When your water tastes or smells funny, the problem might be in the water or it might not. The odor may actually be coming from your sink drain where bacteria grow on food, soap, hair, and other things that get trapped. Gases in the drain that smell get stirred up when water goes down the pipe. Odor can also come from bacteria growing in water heaters—usually ones that have been turned off for a while or have the thermostat set too low.

Chlorine is added to tap water to ensure that germs in the water are killed. When you can taste or smell a hint of chlorine, your water has been properly treated. There are regulations that limit the amount of chlorine added to tap water. An easy way to get rid of chlorine taste and smell is to let the water sit in a glass for a few minutes or put the water in a covered container and chill it in the refrigerator.

For odor, does it come from only one faucet? Does it go away after running the water for a few minutes? If the answer is yes to either question, the source of the odor is probably within your plumbing system. If no to both questions, please call Water Distribution staff at 760-839-4668.

Get Involved

The City Council of the City of Escondido normally meets the first four Wednesdays of each month at 4:30 p.m. in the Council Chambers at City Hall. The address is 201 North Broadway, Escondido. Call 760-839-4638 or visit www.escondido.org for details.

2016 Water Quality Data Table

The tables shown below list all of the regulated drinking water contaminants that were detected during the calendar year of this report. The presence of "contaminants" in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires that monitoring for certain contaminants be less than once per year because the concentrations of these contaminants do not change frequently.

PARAMETER	Units	State MCL	PHG (MCLG)	Range	Average	DLR	Violation	Typical Source / Comments
Clarity (Turbidity)								
Turbidity of Combined Filter Effluent in WTP (at 4 hour intervals)	NTU	TT = 1	N/A	0.04 - 0.11	0.06	-	No	Soil runoff.
				Highest NTU = 0.11				
	%	95%(<0.3)		%(<0.3NTU) = 100 %				
Turbidity in the Distribution System	NTU	5	N/A	0.04 - 0.58	0.08	-	No	Sediment in distribution system.
				Highest NTU = 0.58				
Microbiological Contaminants								
Total Coliform Bacteria (Monthly) in the Distribution System	%	5	(0)	0.00 - 1.27	0.38	-	No	Naturally present in the environment.
				Monthly Highest = 1.27 %				
E.coli (Monthly Positive Number) in the Distribution System	Count	TT	(0)	0 - 0	0	-	No	Human and animal fecal waste.
				Total Positive Number = 0				
Heterotrophic Plate Count Bacteria in the Distribution System	CFU/mL	500	N/A	< 1 - 240	0.67	-	No	Naturally present in the environment.
	%	95%(<500)		% (<500 CFU/ml) = 100 %				
Heterotrophic Plate Count Bacteria in EPTD	CFU/mL	TT = 500	N/A	< 1 - 2	0.02	-	No	Naturally present in the environment.

PARAMETER	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	Range	Average	DLR	Violation	Typical Source / Comments
Disinfectants / Disinfection Byproducts in the Distribution System								
Total Trihalomethanes (TTHMs) Locational RAA (LRAA)	ug/L	80	N/A	29 - 54	39	1	No	Byproducts of drinking water chlorination. Sampled quarterly in distribution system. (Stage 2 D/DBPR)
				32 - 41	37			
Highest Locational RAA				N/A	41			
Haloacetic Acids (HAA5) Locational RAA (LRAA)	ug/L	60	N/A	10 - 23	16	1	No	Byproducts of drinking water chlorination. Sampled quarterly in distribution system. (Stage 2 D/DBPR)
				15 - 21	17			
Highest Locational RAA				N/A	21			
Total Chlorine Residual (Cl2) Running Annual Average(RAA)	mg/L	[4.0]	[4.0]	0.2 - 3.5	2.7	-	No	Addition of chlorine and ammonia as a combined disinfectant, chloramine. Calculated quarterly with monthly average values.
				2.69 - 2.72	2.70			
Highest Running Annual Ave.				N/A	2.72			
Chlorite (ClO2-) Monthly Average	mg/L	1	0.05	0.41 - 0.55	0.48	0.02	No	Byproducts of drinking water chlorination. Monitored during pre-chlorination with chlorine dioxide.
				0.44 - 0.53	0.49			
Chlorate (ClO3-) Monthly Average	ug/L	(NL=800)	N/A	200 - 260	220	20	No	Byproducts of drinking water chlorination. Monitored during pre-chlorination with chlorine dioxide.
				200 - 230	220			

PARAMETER	Units	State MCL	PHG (MCLG)	Range	Average	DLR	Violation	Typical Source / Comments
Inogarnic Contaminants - Primary Standards (Finished Water)								
Barium (Ba)	mg/L	1	2	0.11 - 0.12	0.12	0.1	No	Discharges of oil drilling wastes and from metal refineries. Erosion of natural deposits.
Fluoride (F-)	mg/L	2	1	0.67 - 0.82	0.75	0.1	No	Erosion of natural deposits. Adding fluoride helps prevent dental caries in consumers. (Control Range: 0.7 - 1.3 ppm)
Inorganic Contaminants - Secondary Standards (Finished Water)								
Color	Units	15	N/A	1 - 1	1	-	No	Decaying vegetation or other naturally occurring organic materials.
Chloride (Cl-)	mg/L	500	N/A	89 - 97	93	-	No	Runoff / leaching from natural deposits. Seawater influence.
Corrosivity	SI	Non-corrosive	N/A	0.45 - 0.65	0.52	-	No	Natural or industrial-influenced balance of hydrogen, carbon and oxygen in the water. Affected by temperature and other factors.
Specific conductance	umho/cm	1600	N/A	930 - 1058	996	-	No	Substances that form ions when in water. Seawater influences.
Sulfate (SO4)2-	mg/L	500	N/A	200 - 230	220	0.5	No	Runoff / leaching from natural deposits. Industrial wastes.
Total Dissolved Solids	mg/L	1000	N/A	540 - 720	640	-	No	Runoff / leaching from natural deposits. Industrial wastes.
Turbidity	NTU	5	N/A	0.04 - 0.10	0.07	-	No	Soil runoff.
Inorganic Contaminants - Unregulated (Finished Water)								
Boron	mg/L	(NL=1)	N/A	0.14 - 0.16	0.15	0.1	No	The State is considering setting concentration limits for boron. State regulations now require monitoring, though no limit is set.
Molybdenum	ug/L	N/A	N/A	2.7 - 4.1	3.5	1	No	UCMR3. List 1 contaminant. Sampled in year 2013
Strontium	ug/L	N/A	N/A	440 - 830	708	0.3	No	UCMR3. List 1 contaminant. Sampled in year 2013.
Vanadium	ug/L	(NL=50)	N/A	ND - 0.29	ND	0.2	No	UCMR3. List 1 contaminant. Sampled in year 2013.
Chlorate	ug/L	(NL=800)	N/A	200 - 220	210	20	No	Byproduct of drinking water chlorination. Monitored during pre-chlorination with chlorine dioxide.

PARAMETER	Units	State MCL	PHG (MCLG)	Range	Average	DLR	Violation	Typical Source / Comments
Organic Contaminants - Unregulated (Finished Water)								
Bromochloromethane	ug/L	N/A	N/A	ND - 0.063	ND	0.06	No	UCMR3. List 1 contaminant. Volatile organic compound. Sampled in year 2013.
Radionuclides Contaminants (Finished Water): Year 2015								
Gross Alpha Activity	pCi/L	15	(0)	ND - 7.8	3.8	3	No	Erosion of natural deposits. Sampled in year 2015.
Uranium	pCi/L	20	0.43	2.4 - 2.4	2.4	1	No	Erosion of natural deposits. Sampled in year 2015.

PARAMETER	Units	State AL	PHG	90th Percentile of 65 Samples	# of Sites > AL	DLR	Violation	Typical Source / Comments
Inorganic Contaminants - Copper / Lead in Residential Taps : Year 2015								
Copper (Cu)	mg/L	1.3	0.3	0.47	0	0.05	No	Corrosion of household plumbing sytems. Sampled in year 2015.
Lead (Pb)	ug/L	15	0.2	< 5	0	5	No	Corrosion of household plumbing sytems. Erosion of natural deposits. Sampled in year 2015.

PARAMETER	Units	State MCL	PHG (MCLG)	Range	Average	DLR	Violation	Typical Source / Comments
Additional Analyzed (Finished Water)								
Total Alkalinity as CaCO3	mg/L	N/A	N/A	120 - 130	123	-	No	Erosion of natural deposits. Leaching.
Bicarbonate (HCO3)-	mg/L	N/A	N/A	150 - 150	150	-	No	Erosion of natural deposits. Leaching.
pH	Units	N/A	N/A	7.8 - 8.1	8.0	-	No	
Hardness as CaCO3	mg/L	N/A	N/A	240 - 300	268	-	No	Erosion of natural deposits. Leaching.
Calcium (Ca)	mg/L	N/A	N/A	57 - 72	64	-	No	Erosion of natural deposits. Leaching.
Magnesium (Mg)	mg/L	N/A	N/A	24 - 28	26	-	No	Erosion of natural deposits. Leaching.
Sodium (Na)	mg/L	N/A	N/A	95 - 110	101	-	No	Erosion of natural deposits. Leaching.
Potassium (K)	mg/L	N/A	N/A	4.7 - 5.3	5.1	-	No	Erosion of natural deposits. Leaching.
Silica (SiO2)	mg/L	N/A	N/A	6.6 - 9.0	7.8	-	No	Erosion of natural deposits. Leaching.
Total Chlorine Residual (Cl2)	mg/L	[4.0]	[4.0]	2.7 - 3.4	3.2	-	No	Addition of chlorine and ammonia as a combined disinfectant, chloramine.
Total Trihalomethanes (TTHMs)	ug/L	80	N/A	22 - 49	33	1	No	Byproducts of drinking water chlorination.
Haloacetic Acids (HAA5)	ug/L	60	N/A	9.1 - 19	16	1	No	Byproducts of drinking water chlorination.
Chlorite (ClO2-)	mg/L	1	0.05	0.44 - 0.53	0.49	0.02	No	Byproducts of drinking water chlorination. Monitored during pre-chlorination with chlorine dioxide.
Total Organic Carbon(TOC)	mg/L	TT	N/A	2.3 - 4.0	2.7	0.3	No	TOC provides a medium for the formation of disinfectant byproducts. These by-products include TTHMs and HAAs.

Notice: Sources of drinking 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 animal or human activity. Contaminants that may be present in source water:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, pets, and wildlife.
- Inorganic contaminants, such as salts and metals that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources like agriculture, urban stormwater 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 stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

For volumetric measurements used in this report, please consider the following approximations for perspective purposes:

1 part per million = 1 packet of artificial sweetener added to 250 gallons of iced tea. (mg/L)
1 part per billion = 1 packet of artificial sweetener added to an Olympic size swimming pool. (ug/L)
1 part per trillion = 3 grains of artificial sweetener added to an Olympic size swimming pool. (ng/L)

If you have any questions regarding the water quality information in this report,
please call Timothy Kwak, Supervising Chemist, at 760-839-6290, ext. 7062.