

2016 Consumer Confidence Report Data — Carlsbad Desalination Plant Effluent
Data Date: January 1, 2016 to December 31, 2016

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Effluent	Major Sources in Drinking Water
						Carlsbad Desalination Plant	
PRIMARY STANDARDS—Mandatory Health-Related Standards							
CLARITY							
Combined Filter Effluent Turbidity	NTU	TT = 0.1 (a)	NA	NA	Highest % ≤ 0.1	NA	Soil runoff
MICROBIOLOGICAL							
Total Coliform Bacteria (b)	%	5.0	(0)	NA	Range Average	ND	Naturally present in the environment
E. coli	(c)	(c)	(0)	NA	Range Average	ND	Human and animal fecal waste
Heterotrophic Plate Count (HPC) (d)	CFU/ml	TT	NA	NA	Range Average	ND - 48	Naturally present in the environment
Cryptosporidium	oocysts/200 L	TT	(0)	NA	Range Average	NA	Human and animal fecal waste
Giardia	cysts/200 L	TT	(0)	NA	Range Average	NA	Human and animal fecal waste
ORGANIC CHEMICALS							
Pesticides/PCBs							
Alachlor	ppb	2	4	1	Range Average	ND	Runoff from herbicide used on row crops
Atrazine	ppb	1	0.15	0.5	Range Average	ND	Runoff from herbicide used on row crops and along highways
Bentazon	ppb	18	200	2	Range Average	ND	Runoff/leaching from herbicide used on rice, alfalfa, and grapes
Carbofuran	ppb	18	1.7	5	Range Average	ND	Leaching of soil fumigant used on rice, alfalfa, and grapes
Chlordane	ppt	100	30	100	Range Average	ND	Residue of banned insecticide
2,4-D	ppb	70	20	10	Range Average	ND - 2	Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds
Dalapon	ppb	200	790	10	Range Average	ND	Runoff from herbicide used on rights-of-way, crops, and landscapes
Dibromochloropropane (DBCP)	ppt	200	1.7	10	Range Average	ND	Banned nematocide that may still be present in soils
Dinoseb	ppb	7	14	2	Range Average	ND	Runoff from herbicide used on soybeans, vegetables, and fruits
Diquat	ppb	20	15	4	Range Average	ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endothal	ppb	100	94	45	Range Average	ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endrin	ppb	2	1.8	0.1	Range Average	ND	Residue of banned insecticide and rodenticide
Ethylene Dibromide (EDB)	ppt	50	10	20	Range Average	ND	Petroleum refinery discharges; underground gas tank leaks
Glyphosate	ppb	700	900	25	Range Average	ND	Runoff from herbicide use
Heptachlor	ppt	10	8	10	Range Average	ND	Residue of banned insecticide
Heptachlor Epoxide	ppt	10	6	10	Range Average	ND	Breakdown product of heptachlor
Lindane	ppt	200	32	200	Range Average	ND	Runoff/leaching from insecticide used on cattle, lumber, and gardens
Methoxychlor	ppb	30	0.09	10	Range Average	ND	Runoff/leaching from insecticide uses
Molinate (Ordram)	ppb	20	1	2	Range Average	ND	Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	50	26	20	Range Average	ND	Runoff/leaching from insecticide uses
Pentachlorophenol	ppb	1	0.3	0.2	Range Average	ND	Discharge from wood preserving factories other insecticidal and herbicidal uses
Picloram	ppb	500	500	1	Range Average	ND	Herbicide runoff
Polychlorinated Biphenyls (PCBs)	ppt	500	90	500	Range Average	ND	Runoff from landfills; discharge of waste chemicals
Simazine	ppb	4	4	1	Range Average	ND	Herbicide runoff
Thiobencarb	ppb	70	70	1	Range Average	ND	Runoff leaching from rice herbicide
2,4,5-TP (Silvex)	ppb	50	3	1	Range Average	ND	Residue of banned herbicide
Toxaphene	ppb	3	0.03	1	Range Average	ND	Runoff/leaching from insecticide used on cotton and cattle
Semi-Volatile Organic Compounds							
Acrylamide	NA	TT	(0)	NA	Range Average	NA	Water treatment chemical impurities
Benzo(a)pyrene	ppt	200	7	100	Range Average	ND	Leaching from water storage tank linings and distribution lines
Di(2-ethylhexyl)adipate	ppb	400	200	5	Range Average	ND	Discharge from chemical factories
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Range Average	ND	Chemical factory discharge; inert ingredient in pesticides
Epichlorohydrin	NA	TT	(0)	NA	Range Average	NA	Water treatment chemical impurities
Hexachlorobenzene	ppb	1	0.03	0.5	Range Average	ND	Discharge from metal refineries & agrichemicals factories; wastewater chlorination reaction byproduct
Hexachlorocyclopentadiene	ppb	50	2	1	Range Average	ND	Discharge from chemical factories
2,3,7,8-TCDD (Dioxin)	ppq	30	0.05	5	Range Average	ND	Waste incineration emissions; chemical factory discharge
Volatile Organic Compounds							
Benzene	ppb	1	0.15	0.5	Range Average	ND	Plastics factory discharge; gas tanks and landfill leaching
Carbon Tetrachloride	ppt	500	100	500	Range Average	ND	Discharge from chemical plants and other industrial waste
1,2-Dichlorobenzene	ppb	600	600	0.5	Range Average	ND	Discharge from industrial chemical factories
1,4-Dichlorobenzene	ppb	5	6	0.5	Range Average	ND	Discharge from industrial chemical factories
1,1-Dichloroethane	ppb	5	3	0.5	Range Average	ND	Extraction and degreasing solvent; fumigant
1,2-Dichloroethane	ppt	500	400	500	Range Average	ND	Discharge from industrial chemical factories
1,1-Dichloroethylene	ppb	6	10	0.5	Range Average	ND	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene	ppb	6	100	0.5	Range Average	ND	Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
trans-1,2-Dichloroethylene	ppb	10	60	0.5	Range Average	ND	Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
Dichloromethane (Methylene Chloride)	ppb	5	4	0.5	Range Average	ND	Discharge from pharmaceutical and chemical factories
					Range	ND	Industrial chemical factory discharge;

1,2-Dichloropropane	ppb	5	0.5	0.5	Average	ND	primary component of some fumigants
					Range	ND	
1,3-Dichloropropene	ppt	500	200	500	Average	ND	Runoff/leaching from nematocide used on croplands
					Range	ND	
Ethylbenzene	ppb	300	300	0.5	Average	ND	Petroleum refinery discharge; industrial chemical factories
					Range	ND	
Methyl-tert-butyl ether (MTBE)	ppb	13	13	3	Average	ND	Gasoline discharge from watercraft engines
					Range	ND	
Monochlorobenzene	ppb	70	70	0.5	Average	ND	Discharge from industrial, agricultural, and chemical factories, and dry cleaners
					Range	ND	
Styrene	ppb	100	0.5	0.5	Average	ND	Rubber and plastics factories discharge; landfill leaching
					Range	ND	
1,1,2,2-Tetrachloroethane	ppb	1	0.1	0.5	Average	ND	Discharge from industrial, agricultural, and chemical factories; solvent uses
					Range	ND	
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Average	ND	Discharge from factories, dry cleaners, and auto shops
					Range	ND	
Toluene	ppb	150	150	0.5	Average	ND	Discharge from petroleum and chemical refineries
					Range	ND	
1,2,4-Trichlorobenzene	ppb	5	5	0.5	Average	ND	Discharge from textile-finishing factories
					Range	ND	
1,1,1-Trichloroethane	ppb	200	1,000	0.5	Average	ND	Metal degreasing site discharge; manufacture of food wrappings
					Range	ND	
1,1,2-Trichloroethane	ppb	5	0.3	0.5	Average	ND	Discharge from industrial chemical factories
					Range	ND	
Trichloroethylene (TCE)	ppb	5	1.7	0.5	Average	ND	Discharge from metal degreasing sites and other factories
					Range	ND	
Trichlorofluoromethane (Freon-11)	ppb	150	1300	5	Average	ND	Industrial factory discharge; degreasing solvent; propellant
					Range	ND	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ppm	1.2	4	0.01	Average	ND	Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant
					Range	ND	
Vinyl Chloride	ppt	500	50	500	Average	ND	Leaching from PVC piping; plastic factory discharge; byproduct of TCE and PCE biodegradation
					Range	ND	
Xylenes	ppm	1.750	1.8	0.0005	Average	ND	Discharge from petroleum and chemical refineries; fuel solvent
					Range	ND	
INORGANIC CHEMICALS							
Aluminum	ppm	1	0.6	0.05	Range	ND	Residue from water treatment process; natural deposits erosion
					Highest RAA	ND	
Antimony	ppb	6	20	6	Range	ND	Petroleum refinery discharges; fire retardants; solder; electronics
					Average	ND	
Arsenic	ppb	10	0.004	2	Range	ND	Natural deposits erosion, glass and electronics production wastes
					Average	ND	
Asbestos (f)	MFL	7	7	0.2	Range	NA	Asbestos cement pipes internal corrosion; natural deposits erosion
					Average	NA	
Barium	ppb	1,000	2,000	100	Range	ND - 1.6	Oil and metal refineries discharge; natural deposits erosion
					Average	0.8	
Beryllium	ppb	4	1	1	Range	ND	Discharge from metal refineries, aerospace, and defense industries
					Average	ND	
Cadmium	ppb	5	0.04	1	Range	ND	Internal corrosion of galvanized pipes; natural deposits erosion
					Average	ND	
Chromium	ppb	50	(100)	10	Range	ND - 4.04	Discharge from steel and pulp mills; natural deposits erosion
					Average	1.35	
Chromium VI	ppb	10	0.02	1	Range	NA	Runoff/leaching from natural deposits; discharge from industrial waste factories
					Average	NA	
Copper	ppm	AL = 1.3	0.3	0.05	Range	ND	Internal corrosion of household pipes; natural deposits erosion
					Average	ND	
Cyanide	ppb	150	150	100	Range	ND	Discharge from steel/metal, plastic, and fertilizer factories
					Average	ND	
Fluoride (e)					Control Range		
Treatment-related	ppm				Optimal Fluoride Level		
					Range	0 - 1.45	Erosion of natural deposits; water additive that promotes strong teeth
					Average	0.7	
					Range	ND	House pipes internal corrosion; erosion of natural deposits
					Average	ND	
Lead	ppb	AL = 15	0.2	5	Range	ND	Erosion of natural deposits; factory discharge; landfill runoff
					Average	ND	
Mercury	ppb	2	1.2	1	Range	ND	Erosion of natural deposits; discharge from metal factories
					Average	ND	
Nickel	ppb	100	12	10	Range	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	
Nitrate (as Nitrogen)	ppm	10	10	0.4	Range	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	
Nitrite (as Nitrogen)	ppm	1	1	0.4	Range	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	
Perchlorate	ppb	6	1	4	Range	ND	Industrial waste discharge
					Average	ND	
Selenium	ppb	50	30	5	Range	ND - 2.64	Refineries, mines, and chemical waste discharge; runoff from livestock lots
					Average	0.66	
Thallium	ppb	2	0.1	1	Range	ND	Leaching from ore processing; electronics factory discharge
					Average	ND	
RADIOLOGICALS							
Gross Alpha Particle Activity	pCi/L	15	(0)	3	Range	-0.507 - 0.742	
					Average	0.118	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50 (l)	(0)	4	Range	0.0 - 28.61	
					Average	10.19	Decay of natural and man-made deposits
Radium-226	pCi/L	NA	0.05	1	Range	0.168	
					Average	0.168	Erosion of natural deposits
Radium-228	pCi/L	NA	0.019	1	Range	0.192	
					Average	0.192	Erosion of natural deposits
Combined Radium-226/228	pCi/L	5	(0)	NA	Range	0.168 - 0.192	
					Average	0.18	Erosion of natural deposits
Strontium-90	pCi/L	8	0.35	2	Range	0.111	
					Average	0.111	Decay of natural and man-made deposits
Tritium	pCi/L	20000	400	1,000	Range	43.5	
					Average	43.5	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	1	Range	2.189	
					Average	2.189	Erosion of natural deposits
DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS							
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Range	ND	
					Average	ND	Byproduct of drinking water chlorination
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Range	ND	
					Highest LRAA	ND	Byproduct of drinking water chlorination
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Range	ND	
					Highest LRAA	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1.0	Range	ND	
					Average	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1.0	Range	ND	
					Highest LRAA	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1.0	Range	ND	
					Highest LRAA	ND	Byproduct of drinking water chlorination
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Range	1.37 - 3.15	
					Highest RAA	3.0	Drinking water disinfectant added for treatment
Bromate	ppb	10	0.1	1.0	Range	NA	
					Highest RAA	NA	Byproduct of drinking water ozonation
DBP Precursors Control as Total Organic Carbon (TOC)	ppm	TT	NA	0.30	Range	ND	
					Average	ND	Various natural and man-made sources; TOC as a medium for the formation of disinfection byproducts
SECONDARY STANDARDS—Aesthetic Standards							
Aluminum	ppm	1	0.6	0.05	Range	ND	Residue from water treatment process; natural deposits erosion
					Highest RAA	ND	
Chloride	ppm	500	NA	NA	Range	35.8 - 105	Runoff/leaching from natural deposits; seawater influence
					Average	63.83	
	Color				Range	ND	

Color	Units	15	NA	NA	Average	ND	Naturally-occurring organic materials
					Range	ND	
Copper	ppm	1.0	0.3	0.05	Average	ND	Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching
Foaming Agents (MBAS)	ppm	0.5	NA	NA	Range	ND	
					Average	ND	Municipal and industrial waste discharges
					Range	ND - 0.125	
Iron	ppm	0.3	NA	0.1	Average	0.007	Leaching from natural deposits; industrial wastes
					Range	ND - 0.00127	
Manganese	ppm	0.5	NL = 500	20	Average	0.00003	Leaching from natural deposits
					Range	ND	
MTBE	ppb	5	13	3	Average	ND	Gasoline discharge from watercraft engines
					Range	ND	
Odor Threshold	TON	3	NA	1	Average	ND	Naturally-occurring organic materials
					Range	ND	
Silver	ppb	100	NA	10	Average	ND	Industrial discharges
					Range	195.3 - 481	
Specific Conductance	µS/cm	1,600	NA	NA	Average	347.19	Substances that form ions in water; seawater influence
					Range	10.7 - 27.4	
Sulfate	ppm	500	NA	0.5	Average	17.3	Runoff/leaching from natural deposits; industrial wastes
					Range	ND	
Thiobencarb	ppb	1	70	1	Average	ND	Runoff/leaching from rice herbicide
Total Dissolved Solids (TDS)	ppm	500	NA	NA	Range	0 - 482	Runoff/leaching from natural deposits; seawater influence
					Average	182	
					Range	0.02 - 0.79	
Turbidity	NTU	5	NA	0.1	Average	0.06	Turbidity is a measure of the cloudiness of the water, an indicator of the effectiveness of our filtration system
					Range	ND	
Zinc	ppm	5.0	NA	0.05	Average	ND	Runoff/leaching from natural deposits; industrial wastes
OTHER PARAMETERS							
MICROBIOLOGICAL							
HPC	CFU/ml	TT	NA	NA	Range	<0.2 - 48	
					Median	NA	Naturally present in the environment
CHEMICAL							
Alkalinity	ppm	NA	NA	NA	Range	0 - 110	
					Average	56.22	
Boron (g)	ppm	NA	NA	NA	Range	0.29 - 3,860	Runoff/leaching from natural deposits; industrial wastes and naturally occurring in seawater
					Average	0.496	
Calcium	ppm	NA	NA	NA	Range	13.5 - 40.5	
					Average	24.1	
Chlorate	ppb	NL = 800	NA	20	Range	NA	Byproduct of drinking water chlorination; industrial processes
					Range	NA	
Corrosivity (as Aggressiveness Index)	AI	NA	NA	NA	Range	0 - 110	Elemental balance in water; affected by temperature, other factors
					Average	60.13	
Corrosivity (as Saturation Index)	SI	NA	NA	NA	Range	0.04-0.53	Elemental balance in water; affected by temperature, other factors
					Average	0.28	
Total Hardness	ppm	NA	NA	NA	Range	43.5 - 104	
					Average	59.8	
					Range	0.33 - 4,810	
Magnesium	ppm	NA	NA	NA	Average	0.592	
	pH				Range	6.68 - 14.90	
pH	Units	NA	NA	NA	Average	9.25	
					Range	0.84 - 2.94	
Potassium	ppm	NA	NA	NA	Average	1.93	
					Range	NA	
Radon	pCi/L	NA	NA	100	Average	NA	
					Range	25.8 - 74.5	
Sodium	ppm	NA	NA	NA	Average	47.14	
					Range	ND	
TOC	ppm	TT	NA	0.30	Highest RAA	ND	Various natural and man-made sources; TOC as a medium for the formation of disinfection byproducts
					Range	NA	
Vanadium	ppb	NL = 50	NA	3	Average	NA	Naturally-occurring; industrial waste discharge
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	2	Range	NA	Byproduct of drinking water chloramination; industrial processes
					Range	NA	
Dichlorodifluoromethane (Freon 12)	ppb	NL = 1,000	NA	0.5	Average	ND	Industrial waste discharge
					Range	NA	
Ethyl-tert-butyl ether (ETBE)	ppb	NA	NA	3	Average	NA	Used as gasoline additive
					Range	NA	
tert-Amyl-methyl ether (TAME)	ppb	NA	NA	3	Average	NA	Used as gasoline additive
					Range	NA	
tert-Butyl alcohol (TBA)	ppb	NL = 12	NA	2	Average	NA	MTBE breakdown product; used as gasoline additive
					Range	NA	

ABBREVIATIONS AND FOOTNOTES

Abbreviations

AI	Aggressiveness Index	MCL	Maximum Contaminant Level
AL	Action Level	MCLG	Maximum Contaminant Level Goal
CDPH	California Department of Public Health	MFL	Million Fibers per Liter
CFU	Colony-Forming Units	MRDL	Maximum Residual Disinfectant Level
DBP	Disinfection Byproducts	MRDLG	Maximum Residual Disinfectant Level Goal
DLR	Detection Limits for Purposes of Reporting	NA	Not Applicable
LRAA	Locational Running Annual Average; highest LRAA is the highest of all Locational Running Annual Averages calculated as average of all samples collected within a 12-month period	ND	Not Detected
		NL	Notification Level
		NTU	Nephelometric Turbidity Units
		pCi/L	picoCuries per Liter
		PHG	Public Health Goal
MBAS	Methylene Blue Active Substances	ppb	parts per billion or micrograms per liter (µg/L)

Footnotes

- The reverse osmosis filter effluent turbidity must be equal to or less than 0.1 NTU in 95% of the measurements taken each month, shall not exceed 0.5 NTU in more than two (2) consecutive 15-minute samples and shall not exceed 1.0 NTU at any time. Turbidity is an indicator of the effectiveness of the filters.
- Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment plants.
- E. coli MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains E. coli, constitutes an acute MCL violation. The MCL was not violated.
- All product water tank effluent samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/ml. Values are based on monthly median per State guidelines and recommendations.
- Fluoride samples that were below target ranges were blended with other water supply sources to maintain compliance in water distributed to consumers.
- Not used
- Boron analysis is included as seawater is a natural source for this constituent.