

**2021 Consumer Confidence Report Data — Carlsbad Desalination Plant Effluent**  
**Data Date: January 1, 2021 to December 31, 2021**

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	
<b>PRIMARY STANDARDS—Mandatory Health-Related Standards</b>							
<b>CLARITY</b>							
Combined Filter	NTU	TT = 0.1 (a)			Highest	0.09	
Effluent Turbidity	%	TT (a)	NA	NA	% ≤ 0.1	100%	Soil runoff
<b>MICROBIOLOGICAL</b>							
Total Coliform Bacteria (b)	(c)	5.0	(0)	NA	Highest positive count	0	Naturally present in the environment
E. coli	(c)	(c)	(0)	NA	Total annual positive count	0	Human and animal fecal waste
Heterotrophic Plate Count (HPC) (d)	CFU/ml	TT	NA	NA	Range Average	NA NA	Naturally present in the environment
Cryptosporidium	oocysts/ 200 L	TT	(0)	NA	Range Average	ND ND	Human and animal fecal waste
Giardia	cysts/ 200 L	TT	(0)	NA	Range Average	ND ND	Human and animal fecal waste
<b>ORGANIC CHEMICALS</b>							
<b>Pesticides/PCBs</b>							
Alachlor	ppb	2	4	1	Range Average	ND ND	Runoff from herbicide used on row crops
Atrazine	ppb	1	0.15	0.5	Range Average	ND ND	Runoff from herbicide used on row crops and along highways
Bentazon	ppb	18	200	2	Range Average	ND ND	Runoff/leaching from herbicide used on rice, alfalfa, and grapes
Carbofuran	ppb	18	1.7	5	Range Average	ND ND	Leaching of soil fumigant used on rice, alfalfa, and grapes
Chlordane	ppt	100	30	100	Range Average	ND ND	Residue of banned insecticide
2,4-D	ppb	70	20	10	Range Average	ND ND	Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds
Dalapon	ppb	200	790	10	Range Average	ND ND	Runoff from herbicide used on rights-of-way, crops, and landscapes
Dibromochloropropane (DBCP)	ppt	200	1.7	10	Range Average	ND ND	Banned nematocide that may still be present in soils
Dinoseb	ppb	7	14	2	Range Average	ND ND	Runoff from herbicide used on soybeans, vegetables, and fruits
Diquat	ppb	20	15	4	Range Average	ND ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endothal	ppb	100	94	45	Range Average	ND ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endrin	ppb	2	1.8	0.1	Range Average	ND ND	Residue of banned insecticide and rodenticide
Endrin (EDB)	ppt	50	10	20	Range Average	ND ND	Petroleum refinery discharges; underground gas tank leaks
Glyphosate	ppb	700	900	25	Range Average	ND ND	Runoff from herbicide use
Heptachlor	ppt	10	8	10	Range Average	ND ND	Residue of banned insecticide
Heptachlor Epoxide	ppt	10	6	10	Range Average	ND ND	Breakdown product of heptachlor
Lindane	ppt	200	32	200	Range Average	ND ND	Runoff/leaching from insecticide used on cattle, lumber, and gardens
Methoxychlor	ppb	30	0.09	10	Range Average	ND ND	Runoff/leaching from insecticide uses
Molinate (Ordram)	ppb	20	1	2	Range Average	ND ND	Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	50	26	20	Range Average	ND ND	Runoff/leaching from insecticide uses
Pentachlorophenol	ppb	1	0.3	0.2	Range Average	ND ND	Discharge from wood preserving factories other insecticidal and herbicidal uses
Picloram	ppb	500	500	1	Range Average	ND ND	Herbicide runoff
Polychlorinated Biphenyls (PCBs)	ppt	500	90	500	Range Average	ND ND	Runoff from landfills; discharge of waste chemicals
Simazine	ppb	4	4	1	Range Average	ND ND	Herbicide runoff

Thiobencarb	ppb	70	70	1	Range	ND	
2,4,5-TP (Silvex)	ppb	50	3	1	Average	ND	Runoff leaching from rice herbicide
					Range	ND	
					Average	ND	Residue of banned herbicide
					Range	ND	
Toxaphene	ppb	3	0.03	1	Average	ND	Runoff/leaching from insecticide used on cotton and cattle
<b>Semi-Volatile Organic Compounds</b>							
Acrylamide	NA	TT	(0)	NA	Range	NA	
					Average	NA	Water treatment chemical impurities
					Range	ND	
Benzo(a)pyrene	ppt	200	7	100	Average	ND	Leaching from water storage tank linings and distribution lines
					Range	ND	
Di(2-ethylhexyl)adipate	ppb	400	200	5	Average	ND	Discharge from chemical factories
					Range	ND	
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Average	ND	Chemical factory discharge; inert ingredient in pesticides
					Range	NA	
Epichlorohydrin	NA	TT	(0)	NA	Average	NA	Water treatment chemical impurities
					Range	ND	
Hexachlorobenzene	ppb	1	0.03	0.5	Average	ND	Discharge from metal refineries & agricultural factories; wastewater chlorination reaction byproduct
					Range	ND	
Hexachlorocyclopentadiene	ppb	50	2	1	Average	ND	Discharge from chemical factories
2,3,7,8-TCDD (Dioxin)	ppq	30	0.05	5	Range	ND	Waste incineration emissions; chemical factory discharge
					Average	ND	
<b>Volatile Organic Compounds</b>							
Benzene	ppb	1	0.15	0.5	Range	ND	Plastics factory discharge; gas tanks and landfill leaching
					Average	ND	
Carbon Tetrachloride	ppt	500	100	500	Range	ND	Discharge from chemical plants and other industrial waste
					Average	ND	
1,2-Dichlorobenzene	ppb	600	600	0.5	Range	ND	Discharge from industrial chemical factories
					Average	ND	
1,4-Dichlorobenzene	ppb	5	6	0.5	Range	ND	Discharge from industrial chemical factories
					Average	ND	
1,1-Dichloroethane	ppb	5	3	0.5	Range	ND	Extraction and degreasing solvent; fumigant
					Average	ND	
1,2-Dichloroethane	ppt	500	400	500	Range	ND	Discharge from industrial chemical factories
					Average	ND	
1,1-Dichloroethylene	ppb	6	10	0.5	Range	ND	Discharge from industrial chemical factories
					Average	ND	
cis-1,2-Dichloroethylene	ppb	6	100	0.5	Range	ND	Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
					Average	ND	
trans-1,2-Dichloroethylene	ppb	10	60	0.5	Range	ND	Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
					Average	ND	
Dichloromethane (Methylene Chloride)	ppb	5	4	0.5	Range	ND	Discharge from pharmaceutical and chemical factories
					Average	ND	
1,2-Dichloropropane	ppb	5	0.5	0.5	Range	ND	Industrial chemical factory discharge; primary component of some fumigants
					Average	ND	
1,3-Dichloropropene	ppt	500	200	500	Range	ND	Runoff/leaching from nematocide used on croplands
					Average	ND	
Ethylbenzene	ppb	300	300	0.5	Range	ND	Petroleum refinery discharge; industrial chemical factories
					Average	ND	
Methyl-tert-butyl ether (MTBE)	ppb	13	13	3	Range	ND	Gasoline discharge from watercraft engines
					Average	ND	
Monochlorobenzene	ppb	70	70	0.5	Range	ND	Discharge from industrial, agricultural, and chemical factories, and dry cleaners
					Average	ND	
Styrene	ppb	100	0.5	0.5	Range	ND	Rubber and plastics factories discharge; landfill leaching
					Average	ND	
1,1,2,2-Tetrachloroethane	ppb	1	0.1	0.5	Range	ND	Discharge from industrial, agricultural, and chemical factories; solvent uses
					Average	ND	
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Range	ND	Discharge from factories, dry cleaners, and auto shops
					Average	ND	
Toluene	ppb	150	150	0.5	Range	ND	Discharge from petroleum and chemical refineries
					Average	ND	
1,2,4-Trichlorobenzene	ppb	5	5	0.5	Range	ND	Discharge from textile-finishing factories
					Average	ND	
1,1,1-Trichloroethane	ppb	200	1,000	0.5	Range	ND	Metal degreasing site discharge; manufacture of food wrappings
					Average	ND	
1,1,2-Trichloroethane	ppb	5	0.3	0.5	Range	ND	Discharge from industrial chemical factories
					Average	ND	
Trichloroethylene (TCE)	ppb	5	1.7	0.5	Range	ND	Discharge from metal degreasing sites and other factories
					Average	ND	
Trichlorofluoromethane (Freon-11)	ppb	150	1300	5	Range	ND	Industrial factory discharge; degreasing solvent; propellant
					Average	ND	
1,1,2-Trichloro-1,2,2-					Range	ND	Discharge from metal degreasing sites and other

trifluoroethane (Freon-113)	ppm	1.2	4	0.01	Average	ND	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
<b>INORGANIC CHEMICALS</b>							
					Range	ND	
Aluminum	ppm	1	0.6	0.05	Average	ND	Residue from water treatment process; natural deposits erosion
					Range	ND	
Antimony	ppb	6	20	6	Average	ND	Petroleum refinery discharges; fire retardants; solder; electronics
					Range	ND	
Arsenic	ppb	10	0.004	2	Average	ND	Natural deposits erosion, glass and electronics production wastes
					Range	NA	
Asbestos (f)	MFL	7	7	0.2	Average	NA	Asbestos cement pipes internal corrosion; natural deposits erosion
					Range	ND	
Barium	ppb	1,000	2,000	100	Average	ND	Oil and metal refineries discharge; natural deposits erosion
					Range	ND	
Beryllium	ppb	4	1	1	Average	ND	Discharge from metal refineries, aerospace, and defense industries
					Range	ND	
Cadmium	ppb	5	0.04	1	Average	ND	Internal corrosion of galvanized pipes; natural deposits erosion
					Range	ND	
Chromium	ppb	50	(100)	10	Average	ND	Discharge from steel and pulp mills; natural deposits erosion
					Range	ND	
Chromium VI	ppb	10	0.02	1	Average	ND	Runoff/leaching from natural deposits; discharge from industrial waste factories
					Range	ND	
Copper	ppm	AL = 1.3	0.3	0.05	Average	ND	Internal corrosion of household pipes; natural deposits erosion
					Range	ND	
Cyanide	ppb	150	150	100	Average	ND	Discharge from steel/metal, plastic, and fertilizer factories
					Range	ND-0.799	
Fluoride (e) Treatment-related	ppm	2.0	1	0.1	Average	0.649	Erosion of natural deposits; water additive that promotes strong teeth
					Range	ND	
Lead	ppb	AL = 15	0.2	5	Average	ND	House pipes internal corrosion; erosion of natural deposits
					Range	ND	
Mercury	ppb	2	1.2	1	Average	ND	Erosion of natural deposits; factory discharge; landfill runoff
					Range	ND	
Nickel	ppb	100	12	10	Average	ND	Erosion of natural deposits; discharge from metal factories
					Range	ND	
Nitrate (as Nitrogen)	ppm	10	10	0.4	Average	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Range	ND	
Nitrite (as Nitrogen)	ppm	1	1	0.4	Average	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Range	ND	
Perchlorate	ppb	6	1	4	Average	ND	Industrial waste discharge
					Range	ND	
Selenium	ppb	50	30	5	Average	ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
					Range	ND	
Thallium	ppb	2	0.1	1	Average	ND	Leaching from ore processing; electronics factory discharge
<b>RADIOLOGICALS</b>							
					Range	ND	
Gross Alpha Particle Activity	pCi/L	15	(0)	3	Average	ND	Erosion of natural deposits
					Range	ND	
Gross Beta Particle Activity	pCi/L	50 (l)	(0)	4	Average	ND	Decay of natural and man-made deposits
					Range	ND	
Radium-226	pCi/L	NA	0.05	1	Average	ND	Erosion of natural deposits
					Range	ND	
Radium-228	pCi/L	NA	0.019	1	Average	ND	Erosion of natural deposits
					Range	-0.07-0.48	
Combined Radium-226/228	pCi/L	5	(0)	NA	Average	0.2	Erosion of natural deposits
					Range	ND	
Strontium-90	pCi/L	8	0.35	2	Average	ND	Decay of natural and man-made deposits
					Range	ND	
Tritium	pCi/L	20000	400	1,000	Average	ND	Decay of natural and man-made deposits
					Range	ND	
Uranium	pCi/L	20	0.43	1	Average	ND	Erosion of natural deposits
<b>DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS</b>							
					Range	ND	
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Average	ND	Byproduct of drinking water chlorination
					Range	ND	
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
					Range	ND	
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
					Range	ND	
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1.0	Average	ND	Byproduct of drinking water chlorination
					Range	ND	
Haloacetic Acids (five)					Range	ND	

(HAA5)	ppb	60	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five)					Range	ND	
(HAA5)	ppb	60	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
					Range	2.88-3.39	
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Highest RAA	3.11	Drinking water disinfectant added for treatment
					Range	NA	
Bromate	ppb	10	0.1	1.0	Highest RAA	NA	Byproduct of drinking water ozonation
DBP Precursors Control as Total Organic Carbon (TOC)	ppm	TT	NA	0.30	Range	NA	Various natural and man-made sources;
					Average	NA	TOC as a medium for the formation of disinfection byproducts
<b>SECONDARY STANDARDS—Aesthetic Standards</b>							
Aluminum	ppm	1	0.6	0.05	Range	ND	Residue from water treatment process;
					Average	ND	natural deposits erosion
Chloride	ppm	500	NA	NA	Range	54-96	Runoff/leaching from natural deposits;
					Average	73	seawater influence
Color	Color Units	15	NA	NA	Range	ND	
					Average	ND	Naturally-occurring organic materials
Copper	ppm	1.0	0.3	0.05	Range	ND	Internal corrosion of household pipes; natural
					Average	ND	deposits erosion; wood preservatives leaching
Foaming Agents (MBAS)	ppm	0.5	NA	NA	Range	ND	
					Average	ND	Municipal and industrial waste discharges
Iron	ppm	0.3	NA	0.1	Range	ND	
					Average	ND	Leaching from natural deposits; industrial wastes
Manganese	ppm	0.5	NL = 500	20	Range	ND	
					Average	ND	Leaching from natural deposits
MTBE	ppb	5	13	3	Range	ND	
					Average	ND	Gasoline discharge from watercraft engines
Odor Threshold	TON	3	NA	1	Range	ND	
					Average	ND	Naturally-occurring organic materials
Silver	ppb	100	NA	10	Range	ND	
					Average	ND	Industrial discharges
Specific Conductance	µS/cm	1,600	NA	NA	Range	301.4-494.9	Substances that form ions in water;
					Average	406.44	seawater influence
Sulfate	ppm	500	NA	0.5	Range	10.0-14.0	Runoff/leaching from natural deposits;
					Average	12.3	industrial wastes
Thiobencarb	ppb	1	70	1	Range	ND	
					Average	ND	Runoff/leaching from rice herbicide
Total Dissolved Solids (TDS)	ppm	500	NA	NA	Range	140-278	Runoff/leaching from natural deposits;
					Average	209	seawater influence
Turbidity	NTU	5	NA	0.1	Range	ND-0.82	Turbidity is a measure of the cloudiness of the water,
					Average	0.11	an indicator of the effectiveness of our filtration system
Zinc	ppm	5.0	NA	0.05	Range	ND	
					Average	ND	industrial wastes
<b>OTHER PARAMETERS</b>							
<b>MICROBIOLOGICAL</b>							
HPC	CFU/ml	TT	NA	NA	Range	NA	
					Median	NA	Naturally present in the environment
<b>CHEMICAL</b>							
Alkalinity	ppm	NA	NA	NA	Range	46-92	
					Average	63	
Boron (g)	ppm	NA	NA	NA	Range	0.40-0.81	Runoff/leaching from natural deposits;
					Average	0.59	industrial wastes and naturally occurring in seawater
Calcium	ppm	NA	NA	NA	Range	16.72-34.92	
					Average	20.63	
Chlorate	ppb	NL = 800	NA	20	Range	NA	Byproduct of drinking water chlorination;
					Average	NA	industrial processes
Corrosivity (as Aggressiveness Index)	AI	NA	NA	NA	Range	10.3-10.89	Elemental balance in water; affected
					Average	10.54	by temperature, other factors
Corrosivity (as Saturation Index)	SI	NA	NA	NA	Range	0.04-0.49	Elemental balance in water; affected
					Average	0.24	by temperature, other factors
Total Hardness	ppm	NA	NA	NA	Range	41.8-87.3	
					Average	51.56	
Magnesium	ppm	NA	NA	NA	Range	0.86-1.2	
					Average	1.06	
pH	pH Units	NA	NA	NA	Range	8.10-8.70	
					Average	8.51	
Potassium 40	ppm	NA	NA	NA	Range	0.000-61.441	
					Average	10.950	
Radon	pCi/L	NA	NA	100	Range	NA	
					Average	NA	
Sodium	ppm	NA	NA	NA	Range	53-67	
					Average	59	
TOC	ppm	TT	NA	0.30	Range	NA	Various natural and man-made sources;
					Highest RAA	NA	TOC as a medium for the formation of disinfection byproducts

Vanadium	ppb	NL = 50	NA	3	Range	NA	
					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	Range	NA	
					Average	NA	Industrial waste discharge
Ethyl-tert-butyl ether (ETBE)	ppb	NA	NA	3	Range	NA	
					Average	NA	Used as gasoline additive
tert-Amyl-methyl ether (TAME)	ppb	NA	NA	3	Range	NA	
					Average	NA	Used as gasoline additive
tert-Butyl alcohol (TBA)	ppb	NL = 12	NA	2	Range	NA	
					Average	NA	MTBE breakdown product; used as gasoline additive

#### 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

- (a) 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.
- (b) 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.
- (c) 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.
- (d) 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.
- (e) Fluoride samples that were below target ranges were blended with other water supply sources to maintain compliance in water distributed to consumers.
- (f) Not used
- (g) Boron analysis is included as seawater is a natural source for this constituent.
- (h) This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2021. These revisions add the requirements of the federal Revised Total Coliform Rule, effective since April 1, 2016, to the existing state Total Coliform Rule. The revised 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 U.S. EPA anticipates greater public health protection as the 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. The state Revised Total Coliform Rule became effective July 1, 2021.