

Appendix 5.9 - Summary of Otay Water Treatment Plant Influent Source Water Constituents 2016 - 2020

CSD

			Federal/California Drinking Water Standards ¹			2016 - 2020 Source Water Quality			
Group/Constituents	Units	CSD MDL	DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
General Physical									
Alkalinity, (Total) (as CaCO3 equivalents)	MG/L	20				300	77.2	185	127
Calcium Hardness (CaCO3)	MG/L	10				56	67.8	185	126
Color, Apparent (Unfiltered)	COLOR	1			15	57	ND	29	7.9
Corrosivity ²	-					53	-0.61	0.76	0.213
Hydroxide Alkalinity	MG/L					58	ND	ND	ND
MBAS (Foaming Agents)	MG/L			0.5		5	ND	ND	ND
Odor Threshold @ 60 C (TON)	ODOR	1	1		3	1	1	1	1
pH	PH					1814	6.56	8.68	7.9
Specific Conductance (E.C.)	UMHO/CM				1600	58	469	1090	853
Total Filterable Residue @ 180 C (TDS)	MG/L	10			1000	58	268	636	517
Total Hardness (CaCO3)	MG/L	10				56	119	299	228
Turbidity, Laboratory	NTU	0.07	0.1		5	1914	0.22	5.63	0.874
Microbiological									
Escherichia Coli	/100 ML	1		Present		40	< 1	50	6.35
Fecal Coliform	/100 ML					1683	< 1.8	110	< 1.8
Heterotrophic Bacteria (HPC)	CFU/ML					241	< 1	E 6800	308
Total Coliform	/100 ML	1		Present		1723	< 1	> 2400	43.6
Total Crypto Oocyst Count	/ L	0.1		1		42	ND	6.0	ND
Total Giardia Cyst Count	/ L	0.1		1		42	ND	6.5	ND
Radiologicals									
Gross Alpha	PCI/L		3	15		2	ND	4.79	2.40
Gross Beta	PCI/L		4	50 ⁵		2	ND	4.36	4.08
Uranium	PCI/L		1	20		1	ND	ND	ND

			Federal/California Drinking Water Standards ¹			2016 - 2020 Source Water Quality			
Group/Constituents	Units	CSD MDL	DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
Metals ³									
Aluminum (Al)	UG/L	5	50	1000	200	59	ND	454	21.3
Antimony	UG/L	1	6	6		19	ND	ND	ND
Arsenic	UG/L	1	2	10		21	ND	2.84	1.29
Barium (Ba)	UG/L	2	100	1000		20	48.9	139	83.4
Beryllium	UG/L	0.5	1	4		20	ND	ND	ND
Boron	UG/L	5	100			20	118	231	166
Cadmium (Cd)	UG/L	0.5	1	5		20	ND	ND	ND
Calcium (Ca)	MG/L	5				60	27.1	74	50.4
Chromium (Total Cr)	UG/L	1	10	50		20	ND	ND	ND
Chromium, Hexavalent	UG/L	1				5	ND	ND	ND
Copper (Cu) ⁴	UG/L	1	50	1300	1000	59	ND	25.1	7.99
Iron (Fe)	UG/L	100	100		300	59	ND	231	37.7
Lead (Pb) ⁴	UG/L	0.5	5	15		59	ND	2.08	ND
Magnesium (Mg)	MG/L	3				118	12.2	34.5	23.6
Manganese (Mn)	UG/L	0.5	20		50	59	2.34	288	33.1
Mercury (Hg)	UG/L	0.2	1	2		19	ND	ND	ND
Nickel	UG/L	1	10	100		20	ND	24	1.2
Potassium (K)	MG/L	0.5				58	3.12	6.23	4.88
Selenium (Se)	UG/L	2	5	50		20	ND	ND	ND
Silver	UG/L	1	10	50		20	ND	ND	ND
Sodium (Na)	MG/L	20				59	49.1	119	91.5
Thallium	UG/L	0.5	1	2		20	ND	ND	ND
Vanadium	UG/L	1	3			20	ND	3.48	1.61
Zinc (Zn)	UG/L	5	50		5000	59	ND	ND	ND

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Group/Constituents	Units	CSD MDL				Source Water Quality			
			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
Inorganic Constituents									
Ammonia-N	MG/L	0.031				196	ND	0.415	0.049
Asbestos Chrysotile Fibers >10 microns	MFL	0.2	0.2	7		1	ND	ND	ND
Bicarbonate (as HCO3)	MG/L					60	94	213	154
Bromide	MG/L	0.1				61	ND	0.482	0.115
Carbonate (as CO3)	MG/L					60	ND	4.44	0.263
Chlorate	UG/L		20			5	120	194	139
Chloride	MG/L	0.5			500	57	59	170	115
Chlorite	MG/L		0.02	1.0		3	0.95	1.16	1.06
Cyanide	UG/L		100	150		5	ND	ND	ND
Fluoride	MG/L	0.02	0.1	2		57	0.158	0.516	0.333
Nitrate (as NO3)	MG/L		2	45		281	ND	3.61	ND
Nitrite (NO2)	MG/L	0.0156	0.131	0.328		228	ND	0.386	ND
Perchlorate	UG/L	4	4	6		21	ND	ND	ND
Phosphate, Ortho (as PO4)	MG/L	0.2				54	ND	ND	ND
Phosphorus	MG/L	0.078				52	ND	0.277	ND
Silica	MG/L	0.625				59	3.61	10.2	7.38
Sulfate (SO4)	MG/L	0.5	0.5		500	56	55.9	245	135
Total Nitrogen	MG/L	0.156				54	ND	1.36	0.532

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Group/Constituents	Units	CSD MDL				Source Water Quality			
			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
Organic Constituents, Regulated									
1,1,1-Trichloroethane (1,1,1-TCA)	UG/L	0.4	0.5	200		16	ND	ND	ND
1,1,2,2-Tetrachloroethane	UG/L	0.4	0.5	1		16	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	UG/L	0.4	0.5	5		16	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	UG/L	0.4	0.5	5		16	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	UG/L	0.4	0.5	6		16	ND	ND	ND
1,2,4-Trichlorobenzene	UG/L	0.4	0.5	5		16	ND	ND	ND
1,2-Dichlorobenzene (o-DCB)	UG/L	0.4	0.5	600		16	ND	ND	ND
1,2-Dichloroethane (1,2-DCA)	UG/L	0.4	0.5	0.5		15	ND	ND	ND
1,2-Dichloropropane	UG/L	0.4	0.5	5		16	ND	ND	ND
1,4-Dichlorobenzene (p-DCB)	UG/L	0.4	0.5	5		16	ND	ND	ND
2,3,7,8-tetra CDD	UG/L		0.000005	0.00003		3	ND	ND	ND
2,4,5-TP (SILVEX)	UG/L	1	1	50		16	ND	ND	ND
2,4-D	UG/L	3	10	70		16	ND	ND	ND
Alachlor (ALANEX)	UG/L	0.5	1	2		11	ND	ND	ND
Atrazine (AATREX)	UG/L	0.4	0.5	1		11	ND	ND	ND
Bentazon (BASAGRAN)	UG/L	2	2	18		16	ND	ND	ND
Benzene	UG/L	0.4	0.5	1		15	ND	ND	ND
Benzo(a)pyrene	UG/L	0.1	0.1	0.2		11	ND	ND	ND
Bromodichloromethane	UG/L	0.4	1			245	ND	18.5	5.14
Bromoform	UG/L	0.4	1			245	ND	5.43	1.22
Carbofuran (FURADAN)	UG/L	0.4	5	18		15	ND	ND	ND
Carbon Tetrachloride	UG/L	0.4	0.5	0.5		16	ND	ND	ND
Chlordane	UG/L	0.1	0.1	0.1		18	ND	ND	ND
Chlorodibromomethane	UG/L	0.4	1			245	ND	14.4	4.43
Chloroform (Trichloromethane)	UG/L	1	1			245	ND	34	4.28
cis-1,2-Dichloroethylene (c-1,2-DCE)	UG/L	0.4	0.5	6		16	ND	ND	ND
Dalapon	UG/L	2	10	200		47	ND	ND	ND
Di(2-ethylhexyl) Adipate	UG/L	2	5	400		11	ND	ND	ND
Di(2-ethylhexyl)phthalate (DEHP)	UG/L	3	3	4		11	ND	ND	ND
Dibromoacetic Acid (DBAA)	UG/L	1	1			49	ND	2.87	ND
Dibromochloropropane (DBCP)	UG/L	0.01	0.01	0.2		33	ND	ND	ND

Group/Constituents	Units	CSD MDL	Federal/California Drinking Water Standards ¹			2016 - 2020 Source Water Quality			
			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
Dichloroacetic Acid (DCAA)	UG/L	1	1			49	ND	2.93	ND
Dichloromethane (Methylene Chloride)	UG/L	0.4	0.5	5		16	ND	ND	ND
Dinoseb (DNBP)	UG/L	2	2	7		16	ND	ND	ND
Diquat	UG/L	3	4	20		14	ND	ND	ND
Endothall	UG/L	15	45	100		10	ND	ND	ND
Endrin	UG/L	0.1	0.1	2		29	ND	ND	ND
Ethyl Benzene	UG/L	0.4	0.5	300		16	ND	ND	ND
Ethylene Dibromide (EDB)	UG/L	0.02	0.02	0.05		33	ND	ND	ND
Glyphosate	UG/L	10	25	700		15	ND	ND	ND
Haloacetic Acids (five) (HAA5) ⁶	UG/L	1		60		48	ND	4.17	1.13
Heptachlor	UG/L	0.01	0.01	0.01		18	ND	ND	ND
Heptachlor Epoxide	UG/L	0.01	0.01	0.01		18	ND	ND	ND
Hexachlorobenzene	UG/L	0.5	0.5	1		29	ND	ND	ND
Hexachlorocyclopentadiene	UG/L	0.211	1	50		28	ND	ND	ND
Lindane (gamma-BHC)	UG/L	0.2	0.2	0.2		18	ND	ND	ND
meta,para xylenes	UG/L	0.4	0.5			16	ND	ND	ND
Methoxychlor	UG/L	0.5	10	30		28	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	UG/L	0.4	3	13	5	16	ND	ND	ND
Molinate (ORDRAM)	UG/L	0.5	2	20		11	ND	ND	ND
Monobromoacetic Acid (MBAA)	UG/L	1	1			49	ND	ND	ND
Monochloroacetic Acid (MCAA)	UG/L	2	2			49	ND	ND	ND
Monochlorobenzene (Chlorobenzene)	UG/L	0.4	0.5	70		16	ND	ND	ND
Oxamyl (Vydate)	UG/L	0.4	20	50		15	ND	ND	ND
o-Xylene	UG/L	0.4	0.5			16	ND	ND	ND
Pentachlorophenol (PCP)	UG/L	0.2	0.2	1		16	ND	ND	ND
Picloram	UG/L	1	1	500		16	ND	ND	ND
Polychlorinated Biphenyls, Total, as DCB	UG/L	0.5		0.5		10	ND	ND	ND
Simazine (PRINCEP)	UG/L	0.5	1	4		11	ND	ND	ND
Styrene	UG/L	0.4	0.5	100		16	ND	ND	ND
Tetrachloroethylene (PCE)	UG/L	0.4	0.5	5		16	ND	ND	ND
Thiobencarb (BOLERO)	UG/L	0.5	1	70	1	11	ND	ND	ND
Toluene	UG/L	0.4	0.5	150		16	ND	ND	ND

Group/Constituents	Units	CSD MDL	Federal/California Drinking Water Standards ¹			2016 - 2020 Source Water Quality			
			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
Total Organic Carbon (TOC)	MG/L	0.3				245	2.02	7.79	4.45
Total Toxaphene	UG/L	1	1	3		18	ND	ND	ND
Total Trihalomethanes (TTHMs) ⁶	UG/L	0.4		80		229	ND	56.4	15.1
trans-1,2-Dichloroethylene (t-1,2-DCE)	UG/L	0.4	0.5	10		16	ND	ND	ND
Trichloroacetic Acid (TCAA)	UG/L	1	1			49	ND	1.82	ND
Trichloroethylene (TCE)	UG/L	0.4	0.5	5		16	ND	ND	ND
Trichlorofluoromethane (FREON 11)	UG/L	0.4	5	150		16	ND	ND	ND
Trichlorotrifluoroethane (FREON 113)	UG/L	0.4	10	1200		16	ND	ND	ND
Vinyl Chloride (VC)	UG/L	0.4	0.5	0.5		16	ND	ND	ND

			Federal/California Drinking Water Standards ¹			2016 - 2020			
Group/Constituents	Units	CSD MDL	Source Water Quality			No. of Samples	Min	Max	Mean
			DLR	Primary MCL	Secondary SMCL				
Organic Constituents, Unregulated									
1,1,1,2-Tetrachloroethane	UG/L	0.4	0.5			16	ND	ND	ND
1,1-Dichloropropene	UG/L	0.4	0.5			16	ND	ND	ND
1,2,3-Trichlorobenzene	UG/L	0.4	0.5			16	ND	ND	ND
1,2,3-Trichloropropane	NG/L	5	5			11	ND	ND	ND
1,2,4-Trimethylbenzene	UG/L	0.4	0.5			16	ND	ND	ND
1,3,5-Trimethylbenzene	UG/L	0.4	0.5			16	ND	ND	ND
1,3-Dichlorobenzene (m-DCB)	UG/L	0.4	0.5			16	ND	ND	ND
1,3-Dichloropropane	UG/L	0.4	0.5			16	ND	ND	ND
2,2-Dichloropropane	UG/L	0.4	0.5			16	ND	ND	ND
2,4,5-T	UG/L	3				16	ND	ND	ND
2,4-DB	UG/L	3				16	ND	ND	ND
2-Chlorotoluene	UG/L	0.4	0.5			16	ND	ND	ND
2-Methylisoborneol	NG/L	5				235	ND	22.4	ND
3,5-Dichlorobenzoic Acid	UG/L	3				16	ND	ND	ND
3-Hydroxycarbofuran	UG/L	0.4	3			15	ND	ND	ND
4-Chlorotoluene	UG/L	0.4	0.5			16	ND	ND	ND
4-Nitrophenol	UG/L	3	5			16	ND	ND	ND
Acenaphthylene	UG/L	0.5				10	ND	ND	ND
Acifluorfen	UG/L	3				16	ND	ND	ND
Aldicarb (TEMIK)	UG/L	0.4	3			15	ND	ND	ND
Aldicarb Sulfone	UG/L	0.4	4			15	ND	ND	ND
Aldicarb Sulfoxide	UG/L	0.4	3			15	ND	ND	ND
Aldrin	UG/L	0.1	0.075			18	ND	ND	ND
Anthracene	UG/L	0.5				10	ND	ND	ND
Baygon	UG/L	0.4				15	ND	ND	ND
Benzo (a) Anthracene	UG/L	0.5				10	ND	ND	ND
Benzo (b) Fluoranthene	UG/L	0.5				10	ND	ND	ND
Benzo (ghi) Perylene	UG/L	0.5				10	ND	ND	ND
Benzo (k) Fluoranthene	UG/L	0.5				10	ND	ND	ND
Benzyl Butyl Phthalate	UG/L	0.5				10	ND	ND	ND
Bromobenzene	UG/L	0.4	0.5			16	ND	ND	ND

Group/Constituents	Units	CSD MDL	Federal/California Drinking Water Standards ¹			2016 - 2020 Source Water Quality			
			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
Bromochloromethane	UG/L	0.4	0.5			16	ND	ND	ND
Bromomethane (Methyl Bromide)	UG/L	0.4	0.5			16	ND	ND	ND
Carbaryl (Sevin)	UG/L	0.4	5			15	ND	ND	ND
Chloramben	UG/L	3				16	ND	ND	ND
Chloroethane	UG/L	0.4	0.5			16	ND	ND	ND
Chloromethane (Methyl Chloride)	UG/L	0.4	0.5			16	ND	ND	ND
Chrysene	UG/L	0.5				10	ND	ND	ND
cis-1,3-dichloropropene	UG/L	0.4	0.5			16	ND	ND	ND
Dibenzo (a,h) anthracene	UG/L	0.5				10	ND	ND	ND
Dibromomethane	UG/L	0.4	0.5			16	ND	ND	ND
Dicamba (BANVEL)	UG/L	1.5	1.5			16	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	UG/L	0.4	0.5			16	ND	ND	ND
Dichloroprop	UG/L	3				16	ND	ND	ND
Dieldrin	UG/L	0.02	0.02			18	ND	ND	ND
Diethylphthalate	UG/L	0.5				10	ND	ND	ND
Diisopropyl Ether (DIPE)	UG/L	0.4	3			16	ND	ND	ND
Dimethyl phthalate	UG/L	0.5				10	ND	ND	ND
di-n-Butylphthalate	UG/L	2				10	ND	ND	ND
Ethyl-tert-Butyl Ether (ETBE)	UG/L	0.4	3			16	ND	ND	ND
Fluorene	UG/L	0.5				10	ND	ND	ND
Geosmin	NG/L	5				235	ND	> 55	ND
Hexachlorobutadiene	UG/L	0.4	0.5			16	ND	ND	ND
Indeno (1,2,3-cd) Pyrene	UG/L	0.5				10	ND	ND	ND
Isopropylbenzene (Cumene)	UG/L	0.4	0.5			16	ND	ND	ND
MCPA	UG/L	3				16	ND	ND	ND
MCPP	UG/L	3				16	ND	ND	ND
Methiocarb	UG/L	0.4				15	ND	ND	ND
Methomyl	UG/L	0.4	2			15	ND	ND	ND
Naphthalene	UG/L	0.4	0.5			26	ND	ND	ND
n-Butylbenzene	UG/L	0.4	0.5			16	ND	ND	ND
n-Propylbenzene	UG/L	0.4	0.5			16	ND	ND	ND
Paraquat	UG/L	4	20			14	ND	ND	ND

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			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
PCB-1016 (as DCB)	UG/L	0.26	0.5	0.5		10	ND	ND	ND
PCB-1221 (as DCB)	UG/L	0.19	0.5	0.5		10	ND	ND	ND
PCB-1232 (as DCB)	UG/L	0.23	0.5	0.5		10	ND	ND	ND
PCB-1242 (as DCB)	UG/L	0.26	0.5	0.5		10	ND	ND	ND
PCB-1248 (as DCB)	UG/L	0.3	0.5	0.5		10	ND	ND	ND
PCB-1254 (as DCB)	UG/L	0.33	0.5	0.5		10	ND	ND	ND
PCB-1260 (as DCB)	UG/L	0.36	0.5	0.5		10	ND	ND	ND
Phenanthrene	UG/L	0.5				10	ND	ND	ND
p-Isopropyltoluene	UG/L	0.4				16	ND	ND	ND
Propachlor	UG/L	0.5	0.5			27	ND	ND	ND
Pyrene	UG/L	0.5				10	ND	ND	ND
sec-Butylbenzene	UG/L	0.4	0.5			16	ND	ND	ND
tert-Amyl Methyl Ether (TAME)	UG/L	0.4	3			16	ND	ND	ND
tert-Butyl Alcohol (TBA)	UG/L	1	2			16	ND	ND	ND
tert-Butylbenzene	UG/L	0.4	0.5			16	ND	ND	ND
trans-1,3-dichloropropene	UG/L	0.4	0.5	0.5		16	ND	ND	ND
Trifluralin	UG/L	0.5				10	ND	ND	ND

End Notes:

CSD MDL: City of San Diego Water Quality Laboratory minimum detection level, DLR: detection level for reporting, MCL: maximum contaminant level, SMCL: Secondary MCL, E: Estimated, ND: not detected. Calculated mean below CSD MDL reported as ND.

¹ DLR, MCL, SMCL are obtained from California OEHHA and SWRCB and apply to drinking water and are for reference only. California MCL and SMCL values may be more stringent than federal standards for drinking water.

² Based on the Langelier index. A positive value indicates non-corrosive tendencies. A negative value indicates corrosive tendencies.

³ Trace metal values were from filtered and unfiltered samples. Differences in values were negligible.

⁴ Values referred to as MCLs for Lead and Copper are actually called Action Levels under the Lead and Copper Rule.

⁵ DDW considers 50 pCi/L to be the level of concern for Beta particles.

⁶ Total Trihalomethane and HAA5 compliance is based on quarterly Locational Running Annual Averages (LRAA)