

**Summary of Raw Water Quality\***  
**Otay Water Treatment Plant Influent 2006-2010**

Parameters	Units	DLR**/MDL	Drinking Water Standards <sup>1</sup>		No. of Samples	Raw Water Quality				
			MCL	SMCL		Min	Max	Mean	Median	
<b>General Physical</b>										
Calcium Hardness (CaCO3)	mg/L	20			62	98.9	201	137	138	
Color	Color	1	15		368	nd	37	8.86	7	
Conductivity	µmho/cm		1600		51	688	1080	902	911	
Corrosivity <sup>2</sup>	--				51	-0.38	1.02	0.338	0.38	
Total alkalinity	mg/L	20			64	83.6	152	121	123	
Total Dissolved Solids	mg/L	10	1000		52	321	874	526	539	
Total Hardness (CaCO3)	mg/L	20			65	171	279	228	227	
Total Suspended Solids (TSS)	mg/L	1			54	1	7.5	1.38	1	
Turbidity <sup>3</sup>	ntu	0.07	0.5		1810	0.15	39	0.74	0.61	
pH	pH		6.5-8.5		1285	6.19	8.83	7.93	7.98	
<b>Pathogens and Indicator Organisms</b>										
E. Coli	/100 mL				60	nd	84	18.5	6.3	
Fecal Coliform	/100 mL				1613	2	1600	30.5	8	
Heterotrophic Bacteria (HPC)	cfu/mL				237	1	3700	267	110	
Total Coliform	/100 mL		(4)		1673	nd	16000	442	50	
Total Crypto Oocyst Count	/L				59	nd	1	nd	nd	
Total Giardia Cyst Count	/L				59	nd	1	nd	nd	
<b>Metals</b>										
Aluminum	µg/L	50	1000	200	55	nd	51.6	nd	nd	
Antimony	µg/L	6	6		21	nd	nd	nd	nd	
Arsenic	µg/L	2	10		21	nd	2.36	nd	nd	
Barium	µg/L	100	1000		21	nd	104	nd	nd	
Beryllium	µg/L	1	4		20	nd	nd	nd	nd	
Boron	µg/L	100			21	nd	167	133	139	
Cadmium	µg/L	1	5		22	nd	nd	nd	nd	
Chromium	µg/L	10	50		22	nd	nd	nd	nd	
Copper	µg/L	50	1300 <sup>7</sup>	1000	55	nd	nd	nd	nd	
Iron	µg/L	100		300	54	nd	822	nd	nd	
Lead	µg/L	5	15 <sup>7</sup>		55	nd	nd	nd	nd	
Magnesium	mg/L				54	4	30.9	22.3	23	
Manganese	µg/L	20		50	55	nd	710	33.5	nd	
Mercury	µg/L	1	2		16	nd	nd	nd	nd	
Nickel	µg/L	10	100		22	nd	nd	nd	nd	
Selenium	µg/L	5	50		21	nd	nd	nd	nd	
Silver	µg/L	10		100	21	nd	nd	nd	nd	
Sodium	mg/L	20			54	59.3	105	84.9	85.5	
Thallium	µg/L	1	2		21	nd	nd	nd	nd	
Vanadium	µg/L	3			21	nd	3.15	nd	nd	
Zinc	µg/L	50		5000	55	nd	nd	nd	nd	
<b>Radiological</b>										
Gross Alpha	pCi/L	3	15		1	nd	nd	nd	nd	
Gross Beta	pCi/L	4	50		1	nd	nd	nd	nd	
Combined Radium-226 & Radium-228	pCi/L		5		1	0.83	0.83	0.83	nd	
Strontium 90	pCi/L	2	8		1	nd	nd	nd	nd	
Tritium	pCi/L	1000	20000		1	nd	nd	nd	nd	
Uranium	pCi/L	1	20		1	2.14	2.14	2.14	2.14	
<b>Inorganic Constituents</b>										
Ammonia-N	mg/L	0.031			89	nd	2.96	0.045	nd	
Bicarbonate	mg/L				54	103	169	146	150	
Bromate	µg/L	5	10		1	nd	nd	nd	nd	
Bromide	mg/L	0.1			57	nd	0.324	0.165	0.18	
Calcium	mg/L				54	39.6	80.4	56.2	56.6	
Carbonate	mg/L				54	0	10.9	0	0	
Chloride	mg/L	0.5		500	58	59.1	138	96.8	96.2	
Cyanide, Total	mg/L	0.1	0.15		8	nd	nd	nd	nd	
Fluoride	mg/L	0.1	2		55	0.17	0.332	0.250	0.257	
MBAS (Detergents)	mg/L	0.05		0.5	6	nd	0.2	nd	nd	
Nitrate (as NO3)	mg/L	2	45		141	nd	2.17	nd	nd	
Nitrite (as NO2)	mg/L	1.31	3.29		91	nd	nd	nd	nd	
Perchlorate	µg/L	4	6		15	nd	nd	nd	nd	
Phosphate, Ortho (as PO4)	mg/L	0.2			56	nd	0.268	nd	nd	
Phosphorus	mg/L	0.078			54	nd	nd	nd	nd	
Potassium	mg/L	0.5			54	3.12	5.67	4.45	4.5	
Silica	mg/L	0.5			54	4.46	13.5	7.85	7.32	
Sulfate	mg/L	0.5		500	57	91.2	209	154	158	
Total Nitrogen	mg/L	0.156			53	nd	2.09	0.383	0.36	
UV254	aBS	0.004			555	0.025	0.156	0.069	0.063	
UV254 Filtered	aBS	0.003			4	0.053	0.053	0.053	0.053	
<b>Organic Constituents Regulated</b>										
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	0.5	200		19	nd	nd	nd	nd	
1,1,2,2-Tetrachloroethane	µg/L	0.5	1		19	nd	nd	nd	nd	
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	0.5	5		19	nd	nd	nd	nd	
1,1-Dichloroethane (1,1-DCA)	µg/L	0.5	5		19	nd	nd	nd	nd	
1,1-Dichloroethylene (1,1-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd	
1,2,4-Trichlorobenzene	µg/L	0.5	5		19	nd	nd	nd	nd	
1,2-Dichlorobenzene (o-DCB)	µg/L	0.5	600		19	nd	nd	nd	nd	
1,2-Dichloroethane (1,2-DCA)	µg/L	0.5	0.5		19	nd	nd	nd	nd	
1,2-Dichloropropane	µg/L	0.5	5		19	nd	nd	nd	nd	
1,4-Dichlorobenzene (p-DCB)	µg/L	0.5	5		19	nd	nd	nd	nd	

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			MCL	SMCL		Min	Max	Mean	Median	
2,4,5-TP (SILVEX)	µg/L	1	50		18	nd	nd	nd	nd	
2,4-D	µg/L	10	70		18	nd	nd	nd	nd	
Alachlor (ALANEX)	µg/L	1	2		19	nd	nd	nd	nd	
Atrazine (AATREX)	µg/L	0.5	1		18	nd	nd	nd	nd	
Bentazon (BASAGRAN)	µg/L	2	18		18	nd	nd	nd	nd	
Benzene	µg/L	0.5	1		19	nd	nd	nd	nd	
Benzo(a)pyrene	µg/L	0.1	0.2		17	nd	nd	nd	nd	
Bromodichloromethane	µg/L	1	100		244	nd	30.8	3.76	2.74	
Bromoform	µg/L	1	100		243	nd	11.4	1.89	1.08	
Carbofuran (FURADAN)	µg/L	5	18		18	nd	nd	nd	nd	
Carbon Tetrachloride	µg/L	0.5	0.5		19	nd	nd	nd	nd	
Chlordane	µg/L	0.1	0.1		8	nd	nd	nd	nd	
Chloroform (Trichloromethane)	µg/L	1			244	nd	25.2	2.42	1.25	
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd	
Dalapon	µg/L	10	200		45	nd	nd	nd	nd	
Di(2-ethylhexyl) Adipate	µg/L	5	400		18	nd	nd	nd	nd	
Dibromoacetic Acid (DBAA)	µg/L	1			45	nd	5.98	0.24	nd	
Dibromochloromethane	µg/L	1			244	nd	34.1	4.74	3.15	
Dibromochloropropane (DBCP)	µg/L	0.01	0.2		25	nd	nd	nd	nd	
Dichloroacetic Acid (DCAA)	µg/L	1			45	nd	9.08	nd	nd	
Dichloromethane (Methylene Chloride)	µg/L	0.5	5		19	nd	nd	nd	nd	
Diethylhexylphthalate (DEHP)	µg/L	3	4		18	nd	nd	nd	nd	
Dinoseb (DNBP)	µg/L	2	7		18	nd	nd	nd	nd	
Diquat	µg/L	4	20		17	nd	nd	nd	nd	
Endothall	µg/L	45	100		21	nd	nd	nd	nd	
Endrin	µg/L	0.1	2		26	nd	nd	nd	nd	
Ethyl Benzene	µg/L	0.5	300		19	nd	nd	nd	nd	
Ethylene Dibromide (EDB)	µg/L	0.02	0.05		26	nd	nd	nd	nd	
Glyphosate	µg/L	25	700		17	nd	nd	nd	nd	
Haloacetic Acids (five) (HAA5) <sup>5</sup>	µg/L	1	60		44	nd	23.8	1.43	nd	
Heptachlor	µg/L	0.01	0.01		7	nd	nd	nd	nd	
Heptachlor Epoxide	µg/L	0.01	0.01		7	nd	nd	nd	nd	
Hexachlorobenzene	µg/L	0.5	1		26	nd	nd	nd	nd	
Hexachlorocyclopentadiene	µg/L	1	50		20	nd	nd	nd	nd	
Lindane (gamma-BHC)	µg/L	0.2	0.2		7	nd	nd	nd	nd	
m,p-Xylene	µg/L	0.5			19	nd	nd	nd	nd	
Methoxychlor	µg/L	10	30		26	nd	nd	nd	nd	
Methyl-tert-butyl ether (MTBE)	µg/L	3	13	5	19	nd	nd	nd	nd	
Molinate (ORDRAM)	µg/L	2	20		14	nd	nd	nd	nd	
Monobromoacetic Acid (MBAA)	µg/L	1			44	nd	1.45	nd	nd	
Monochloroacetic Acid (MCAA)	µg/L	2			45	nd	nd	nd	nd	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	70		19	nd	nd	nd	nd	
Oxamyl (Vydate)	µg/L	20	50		18	nd	nd	nd	nd	
o-Xylene	µg/L	0.5			19	nd	nd	nd	nd	
Pentachlorophenol (PCP)	µg/L	0.5	1		18	nd	nd	nd	nd	
Picloram	µg/L	1	500		18	nd	nd	nd	nd	
Polychlorinated Biphenyls, Total, as DCB	µg/L	0.5	0.5		9	nd	nd	nd	nd	
Simazine (PRINCEP)	µg/L	1	4		18	nd	nd	nd	nd	
Styrene	µg/L	0.5	100		19	nd	nd	nd	nd	
Tetrachloroethylene (PCE)	µg/L	0.5	5		19	nd	nd	nd	nd	
Thiobencarb (BOLERO)	µg/L	1	70	1	20	nd	nd	nd	nd	
Toluene	µg/L	0.5	150		19	nd	nd	nd	nd	
Total Organic Carbon (TOC)	mg/L	0.3			240	2.22	7.94	4.07	3.85	
Total Trihalomethanes (TTHMs) <sup>6</sup>	µg/L	1	80		219	nd	99	13.9	11.8	
Total Xylenes (m,p, & o)	µg/L		1750		19	nd	nd	nd	nd	
Toxaphene	µg/L	1	3		7	nd	nd	nd	nd	
trans-1,2-Dichloroethylene (t-1,2-DCE)	µg/L	0.5	10		19	nd	nd	nd	nd	
Trichloroacetic Acid (TCAA)	µg/L	1			45	nd	7.32	nd	nd	
Trichloroethylene (TCE)	µg/L	0.5	5		19	nd	nd	nd	nd	
Trichlorofluoromethane (FREON 11)	µg/L	5	150		19	nd	nd	nd	nd	
Trichlorotrifluoroethane (FREON 113)	µg/L	10	1200		19	nd	nd	nd	nd	
Vinyl Chloride (VC)	µg/L	0.5	0.5		19	nd	nd	nd	nd	
<b>Organic Constituents Unregulated</b>										
1,1,1,2-Tetrachloroethane	µg/L	0.5			19	nd	nd	nd	nd	
1,1-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd	
1,2,3-Trichlorobenzene	µg/L	0.5			19	nd	nd	nd	nd	
1,2,3-Trichloropropane	ng/L	5			17	nd	nd	nd	nd	
1,2,4-Trimethylbenzene	µg/L	0.4			19	nd	nd	nd	nd	
1,3,5-Trimethylbenzene	µg/L	0.5			19	nd	nd	nd	nd	
1,3-Dichlorobenzene (m-DCB)	µg/L	0.5			19	nd	nd	nd	nd	
1,3-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd	
2,2-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd	
2,4,5-T	µg/L	3			18	nd	nd	nd	nd	
2,4-DB	µg/L	3			18	nd	nd	nd	nd	
2-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd	
2-Methylisoborneol (MIB)	ng/L	5			217	nd	52.9	nd	nd	
3,5-Dichlorobenzoic Acid	µg/L	3			18	nd	nd	nd	nd	
3-Hydroxycarbofuran	µg/L	3			18	nd	nd	nd	nd	
4-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd	
Acenaphthylene	µg/L	5			12	nd	nd	nd	nd	
Acifluorfen	µg/L	3			18	nd	nd	nd	nd	
Aldicarb (TEMIK)	µg/L	3			18	nd	nd	nd	nd	
Aldicarb Sulfone	µg/L	4			18	nd	nd	nd	nd	
Aldicarb Sulfoxide	µg/L	3			18	nd	nd	nd	nd	

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			MCL	SMCL		Min	Max	Mean	Median
Aldrin	µg/L	0.075			6	nd	nd	nd	nd
Anthracene	µg/L	5			18	nd	nd	nd	nd
Baygon	µg/L	0.4			18	nd	nd	nd	nd
Benzo (a) Anthracene	µg/L	10			19	nd	nd	nd	nd
Benzo (b) Fluoranthene	µg/L	10			17	nd	nd	nd	nd
Benzo (g,h,i) Perylene	µg/L	10			17	nd	nd	nd	nd
Benzo (k) Fluoranthene	µg/L	10			17	nd	nd	nd	nd
Benzyl Butyl Phthalate	µg/L	10			18	nd	nd	nd	nd
Bromobenzene	µg/L	0.5			19	nd	nd	nd	nd
Bromochloromethane	µg/L	0.5			19	nd	nd	nd	nd
Bromomethane (Methyl Bromide)	µg/L	0.5			19	nd	nd	nd	nd
Carbaryl (Sevin)	µg/L	5			18	nd	nd	nd	nd
Chloramben	µg/L	3			18	nd	nd	nd	nd
Chloroethane	µg/L	0.5			19	nd	nd	nd	nd
Chloromethane (Methyl Chloride)	µg/L	0.5			19	nd	nd	nd	nd
Chrysene	µg/L	5			19	nd	nd	nd	nd
cis -1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Dibenzo (a,h) anthracene	µg/L	5			17	nd	nd	nd	nd
Dibromomethane	µg/L	0.5			19	nd	nd	nd	nd
Dicamba (BANVEL)	µg/L	1.5			18	nd	nd	nd	nd
Dichlorodifluoromethane (Freon 12)	µg/L	0.5			19	nd	nd	nd	nd
Dichloroprop	µg/L	3			18	nd	nd	nd	nd
Dieldrin	µg/L	0.02			7	nd	nd	nd	nd
Diethyl phthalate	µg/L	5			19	nd	nd	nd	nd
Diisopropyl Ether (DIPE)	µg/L	3			19	nd	nd	nd	nd
Dimethyl phthalate	µg/L	5			14	nd	nd	nd	nd
di-n-Butylphthalate	µg/L	5			19	nd	nd	nd	nd
Dissolved Organic Carbon (DOC)	mg/L	0.3			2	3.77	3.85	3.81	
Ethyl-tert-Butyl Ether (ETBE)	µg/L	3			19	nd	nd	nd	nd
Fluorene	µg/L	5			19	nd	nd	nd	nd
Geosmin	ng/L	5			216	nd	7.5	nd	nd
Hexachlorobutadiene	µg/L	0.5			19	nd	nd	nd	nd
Indeno (1,2,3-cd) Pyrene	µg/L	10			17	nd	nd	nd	nd
Isopropylbenzene (Cumene)	µg/L	0.5			19	nd	nd	nd	nd
MCPA	µg/L	3			18	nd	nd	nd	nd
MCCPP	µg/L	3			18	nd	nd	nd	nd
Methiocarb	µg/L	0.4			18	nd	nd	nd	nd
Methomyl	µg/L	2			18	nd	nd	nd	nd
Naphthalene	µg/L	0.5			33	nd	nd	nd	nd
n-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
n-Propylbenzene	µg/L	0.5			19	nd	nd	nd	nd
Paraquat	µg/L	4			17	nd	nd	nd	nd
PCB 1016 / 1242	µg/L	0.5			4	nd	nd	nd	nd
PCB-1016 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1221 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1232 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1242 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1248 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1254 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1260 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
Phenanthrene	µg/L	5			19	nd	nd	nd	nd
p-Isopropyltoluene	µg/L	0.2			19	nd	nd	nd	nd
Propachlor	µg/L	0.5			26	nd	nd	nd	nd
Pyrene	µg/L	0.5			19	nd	nd	nd	nd
sec-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
tert-Amyl Methyl Ether (TAME)	µg/L	3			19	nd	nd	nd	nd
tert-Butyl Alcohol (TBA)	µg/L	2			19	nd	nd	nd	nd
tert-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
trans-1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Trifluralin	µg/L	0.5			19	nd	nd	nd	nd

NOTES:

\*The acceptance criteria in this table apply to finished, potable water, and are for reference only.

\*\* The State of California DLR values are used when available. Parameters without DLR values were reported at MDL levels.

- (1) State MCL and MCLG values may be more stringent than federal standards for treated water.
  - (2) Based on the Langelier Index. A positive value indicates non-corrosive tendencies. A negative value indicates corrosive tendencies.
  - (3) Turbidity of treated water is not to exceed 0.3 NTU 95% of the time.
  - (4) No more than 5% of distribution system samples can be total coliform positive.
  - (5) Haloacetic acids (five) is the sum of the concentrations of mon-, di-, and trichloroacetic acids and mono- and dibromoacetic acids. MCL based on annual average.
  - (6) Total trihalomethanes is the sum of the concentrations of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. MCL based on annual average
  - (7) Lead and Copper Rule Action Level.
- a: absent  
nd: non-detected at State DLR or MDL if DLR not available