

Summary of Raw Water Quality*									
Alvarado Water Treatment Plant Influent (untreated water) 2006-2010									
Parameters	Units	DLR**/MDL	Drinking Water Standards ¹		No. of Samples	Raw Water Quality			
			MCL	SMCL		Min	Max	Mean	Median
General Physical									
Calcium Hardness (CaCO3)	mg/L	20			68	100	199	141	142
Color	Color	1		15	397	nd	19	6.1	6
Conductivity	µmho/cm			1600	57	711	1100	870	845
Corrosivity ²	--			non-corrosive	55	-0.62	0.79	0.17	0.175
Threshold odor number	Odor	1		3	1359	1	6	2.14	2
Total Alkalinity	mg/L	20			71	89.8	132	113	114
Total Dissolved Solids	mg/L	10		1000	58	388	681	519	527
Total Hardness (CaCO3)	mg/L	20			71	170	299	226	224
Total Suspended Solids (TSS)	mg/L	1			58	1	10.5	1.77	1.1
Turbidity ³	ntu	0.07	0.5		1883	0.08	12.5	0.792	0.67
pH	pH			6.5-8.5	1509	6.77	8.60	7.74	7.74
Pathogens and Indicator Organisms									
E. Coli	/100 mL				59	1	260	22.1	3.1
Fecal Coliform	/100 mL				2042	2	1600	39	2
Heterotrophic Bacteria (HPC)	cfu/mL				512	1	990	89.8	50
Total Coliform	/100 mL		(4)		2101	2	16000	181	22
Total Crypto Oocust Count	/ L				60	nd	3.3	nd	nd
Total Giardia Cyst Count	/ L				60	nd	6.9	nd	nd
Metals									
Aluminum	µg/L	50	1000	200	55	nd	77.2	nd	nd
Antimony	µg/L	6	6		20	nd	nd	nd	nd
Arsenic	µg/L	2	10		20	nd	2.91	nd	nd
Barium	µg/L	100	1000		20	nd	118	nd	nd
Beryllium	µg/L	1	4		19	nd	nd	nd	nd
Boron	µg/L	100			20	nd	146	117	115
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 ⁷	1000	55	nd	nd	nd	nd
Iron	µg/L	50		300	55	nd	340	nd	51.9
Lead	µg/L	5	15 ⁷		55	nd	nd	nd	nd
Magnesium	mg/L				59	4.4	29.2	20.5	20.8
Manganese	µg/L	20		50	55	nd	252	33	23
Mercury	µg/L	1	2		15	nd	nd	nd	nd
Nickel	µg/L	10	100		22	nd	nd	nd	nd
Selenium	µg/L	5	50		20	nd	nd	nd	nd
Silver	µg/L	10		100	20	nd	nd	nd	nd
Sodium	mg/L	20			55	60.2	94.7	78.6	80.7
Thallium	µg/L	1	2		20	nd	nd	nd	nd
Vanadium	µg/L	3			20	nd	3.21	nd	nd
Zinc	µg/L	50		5000	55	nd	nd	nd	nd
Radiological									
Gross Alpha	pCi/L	3	15		1	nd	nd	nd	nd
Gross Beta	pCi/L	4	50		1	5.16	5.16	5.16	5.16
Combined Radium-226 & Radium-228	pCi/L		5		1	0.58	0.58	0.58	0.58
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	2.04	2.04	2.04	2.04
Inorganic Constituents									
Ammonia-N	mg/L	0.031			118	nd	0.077	nd	nd
Bicarbonate	mg/L				59	109	154	137	140
Bromate	µg/L	5	10		4	nd	nd	nd	nd
Bromide	mg/L	0.1			68	nd	2.31	0.157	0.135
Calcium	mg/L				59	42.8	79.6	57.9	57.9
Carbonate	mg/L				58	nd	nd	nd	nd
Chloride	mg/L	0.5		500	64	66.3	104	85.7	87.7

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Cyanide, Total	mg/L	0.1	0.15		8	nd	nd	nd	nd
Fluoride	mg/L	0.1	2		61	0.15	0.336	0.224	0.219
MBAS (Detergents)	mg/L	0.05		0.5	5	nd	0.07	nd	nd
Nitrate (as NO3)	mg/L	2	45		176	nd	2.49	nd	nd
Nitrite (as NO2)	mg/L	1.31	3.29		119	nd	nd	nd	nd
Phosphate, <i>Ortho</i> (as PO4)	mg/L	0.2			63	nd	0.586	nd	nd
Perchlorate	µg/L	4	6		2	nd	nd	nd	nd
Phosphorus	mg/L	0.078			58	nd	nd	nd	nd
Potassium	mg/L	0.5			55	3.15	5.15	4.21	4.22
Silica	mg/L	0.5			58	7.22	12.7	10.1	10.1
Sulfate	mg/L	0.5		500	64	108	234	159	159
Total Nitrogen	mg/L	0.156			57	nd	1.02	0.452	0.422
UV254 Filtered	ABS	0.003			2	0.023	0.024	0.024	0.024
Organic Constituents Regulated									
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-Dichloroethene (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 (<i>o</i> -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 (<i>p</i> -DCB)	µg/L	0.5	5		19	nd	nd	nd	nd
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		18	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		18	nd	nd	nd	nd
Bromodichloromethane	µg/L	1			273	nd	18.6	5.26	5.06
Bromoform	µg/L	1			272	nd	11.4	1.9	nd
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		9	nd	nd	nd	nd
Chloroform (Trichloromethane)	µg/L	1			273	nd	22.7	3.59	2.67
<i>cis</i> -1,2-Dichloroethylene (<i>c</i> -1,2-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd
Dalapon	µg/L	10	200		55	nd	nd	nd	nd
Di(2-ethylhexyl) Adipate	µg/L	5	400		18	nd	nd	nd	nd
Dibromoacetic acid (DBAA)	µg/L	1			55	nd	1.46	nd	nd
Dibromochloromethane	µg/L	1			273	nd	25.9	4.92	2.62
Dibromochloropropane (DBCP)	µg/L	0.01	0.2		27	nd	nd	nd	nd
Dichloroacetic acid (DCAA)	µg/L	1			54	nd	3.81	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		16	nd	nd	nd	nd
Endothall	µg/L	45	100		20	nd	nd	nd	nd
Endrin	µg/L	0.1	2		28	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		27	nd	nd	nd	nd
Glyphosate	µg/L	25	700		17	nd	nd	nd	nd
Haloacetic acids (five) (HAAS) ⁵	µg/L	1	60		53	nd	6.65	nd	nd
Heptachlor	µg/L	0.01	0.01		9	nd	nd	nd	nd
Heptachlor epoxide	µg/L	0.01	0.01		9	nd	nd	nd	nd
Hexachlorobenzene	µg/L	0.5	1		27	nd	nd	nd	nd
Hexachlorocyclopentadiene	µg/L	1	50		24	nd	nd	nd	nd
Lindane(gamma-BHC)	µg/L	0.2	0.2		9	nd	nd	nd	nd
<i>m,p</i> -Xylene	µg/L	0.5			38	nd	nd	nd	nd
Methoxychlor	µg/L	10	30		28	nd	nd	nd	nd
Methyl- <i>tert</i> -butyl ether (MTBE)	µg/L	3	13	5	19	nd	nd	nd	nd
Molinate (ORDRAM)	µg/L	2	20		16	nd	nd	nd	nd
Monobromoacetic Acid (MBAA)	µg/L	1			54	nd	nd	nd	nd
Monochloroacetic Acid (MCAA)	µg/L	2			55	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
<i>o</i> -Xylene	µg/L	0.5			38	nd	nd	nd	nd
Pentachlorophenol (PCP)	µg/L	0.2	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		10	nd	nd	nd	nd
Simazine (PRINCEP)	µg/L	1	4		16	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	19	nd	nd	nd	nd
Toluene	µg/L	0.5	150		19	nd	nd	nd	nd
Total Organic Carbon (TOC)	mg/L	0.3			332	2.07	14.7	3.17	3

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Total Trihalomethanes (TTHMs) ⁶	µg/L	1	80		263	nd	58.6	15.8	13.6
Total Xylenes (<i>m,p</i> & <i>o</i>)	µg/L		1750		38	nd	nd	nd	nd
Toxaphene	µg/L	1	3		8	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene (t-1,2-DCE)	µg/L	0.5	10		19	nd	nd	nd	nd
Trichloroacetic Acid (TCAA)	µg/L	1			55	nd	1.58	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
Organic Constituents Unregulated									
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			18	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			233	nd	25.1	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			15	nd	nd	nd	nd
Acifluorfen	µg/L	3			18	nd	nd	nd	nd
Aldicarb	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
Aldrin	µg/L	0.075			8	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			18	nd	nd	nd	nd
Benzo (g,h,i) Perylene	µg/L	10			18	nd	nd	nd	nd
Benzo (k) Fluoranthene	µg/L	10			18	nd	nd	nd	nd
Benzyl Butyl Phthalate	µg/L	10			19	nd	nd	nd	nd
Bromobenzene	µg/L	0.5			12	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
<i>cis</i> -1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Dibenzo (a,h) anthracene	µg/L	5			18	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			9	nd	nd	nd	nd
Diethylphthalate	µg/L	0.5			18	nd	nd	nd	nd
Diisopropyl Ether (DIPE)	µg/L	3			19	nd	nd	nd	nd
Dimethyl phthalate	µg/L	5			15	nd	nd	nd	nd
Di- <i>n</i> -Butylphthalate	µg/L	5			18	nd	nd	nd	nd
Dissolved Organic Carbon	mg/L	0.3			2	2.17	2.2	2.19	2.19
Ethyl- <i>tert</i> -butyl ether (ETBE)	µg/L	3			19	nd	nd	nd	nd
Fluorene	µg/L	5			18	nd	nd	nd	nd
Geosmin	ng/L	5			231	nd	10.4	nd	nd
Hexachlorobutadiene	µg/L	0.5			19	nd	nd	nd	nd
Indeno(1,2,3-cd)pyrene	µg/L	10			18	nd	nd	nd	nd
Isopropylbenzene (Cumene)	µg/L	0.5			19	nd	nd	nd	nd
MCPA	µg/L	3			18	nd	nd	nd	nd
MCPP	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			35	nd	nd	nd	nd
<i>n</i> -Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
<i>n</i> -Propylbenzene	µg/L	0.5			19	nd	nd	nd	nd
Paraquat	µg/L	4			16	nd	nd	nd	nd
PCB 1016 / 1242	µg/L	0.5			5	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			10	nd	nd	nd	nd
PCB-1232 (as DCB)	µg/L	0.5			10	nd	nd	nd	nd

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PCB-1242 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1248 (as DCB)	µg/L	0.5			10	nd	nd	nd	nd
PCB-1254 (as DCB)	µg/L	0.5			10	nd	nd	nd	nd
PCB-1260 (as DCB)	µg/L	0.5			10	nd	nd	nd	nd
Phenanthrene	µg/L	5			18	nd	nd	nd	nd
<i>p</i> -Isopropyltoluene	µg/L	0.2			19	nd	nd	nd	nd
Propachlor	µg/L	0.5			27	nd	nd	nd	nd
Pyrene	µg/L	0.5			18	nd	nd	nd	nd
<i>sec</i> -Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
<i>tert</i> -Amyl Methyl Ether (TAME)	µg/L	3			19	nd	nd	nd	nd
<i>tert</i> -Butyl Alcohol (TBA)	µg/L	2			19	nd	nd	nd	nd
<i>tert</i> -Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
<i>trans</i> -1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Trifluralin	µg/L	0.5			18	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) Treated Water Standards: 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