

Appendix 5.15 - Summary of Raw Water Quality
Miramar Water Treatment Plant Influent 2011-2015

Parameters	Units	DLR*/MDL	Drinking Water Standards ¹	No. of Samples	Raw Water Quality**			
General Physical			MCL	SMCL	Min	Max	Mean	Median
Alkalinity, (Total) (as CaCO ₃ equivalents)	MG/L		10	300	67.3	144	105	105
Calcium Hardness (CaCO ₃)	MG/L		10	55	75.2	190	138	148
Color, Apparent (Unfiltered)	COLOR	15	1	50	ND	8	3.04	3
Corrosivity ²	.			50	-0.98	0.95	0.25	0.315
Hydroxide Alkalinity	MG/L			51	0	0	0	0
MBAS (Foaming Agents)	MG/L	0.5	0.04	5	ND	ND	ND	ND
Odor Threshold @ 60 C	ODOR	3	1	66	1	3	1.58	1.4
pH	PH			1777	6.99	8.69	7.99	8
Specific Conductance (E.C.)	UMHO/CM	1600		55	444	1140	763	789
Total Filterable Residue @ 180 C (TDS)	MG/L	1000	10	52	280	657	484	516
Total Hardness (CaCO ₃)	MG/L		10	53	113	318	223	240
Total Suspended Solids (TSS)	MG/L		2	50	<1	1.3	<1	<1
Turbidity, Laboratory	NTU	5	0.07	1900	0.19	1.3	0.533	0.5
Microbiological			MCL	SMCL	Min	Max	Mean	Median
Escherichia Coli	/100 ML	1.8		60	<1	42	3.9	1
Fecal Coliform	/100 ML	1.8		1714	<1.8	240	4.1	<1.8
Heterotrophic Bacteria (HPC)	CFU/ML			249	<1	2700	189	51
Total Coliform	/100 ML	1.8		1774	<1	>2400	56.1	7.8
Total Crypto Oocyst Count	/ L	0.1	2 log removal	59	ND	ND	ND	ND
Total Giardia Cyst Count	/ L	0.1	3 log removal	59	ND	0.1	ND	ND
Metals			MCL	SMCL	Min	Max	Mean	Median
Aluminum (Al)	UG/L	50	1000	200	55	ND	ND	ND
Antimony	UG/L	6	6	20	ND	ND	ND	ND
Arsenic	UG/L	2	10	31	ND	3.27	ND	2.19
Barium (Ba)	UG/L	100	1000	20	ND	135	ND	ND
Beryllium	UG/L	1	4	18	ND	ND	ND	ND
Boron	UG/L	100		19	110	163	125	120
Cadmium (Cd)	UG/L	1	5	20	ND	ND	ND	ND
Calcium (Ca)	MG/L	5		52	30.1	76	54.8	58.5
Chromium (Total Cr)	UG/L	10	50	20	ND	ND	ND	ND
Chromium, Hexavalent	UG/L	1		4	ND	ND	ND	ND
Copper (Cu)	UG/L	50	1300	1000	55	ND	ND	ND
Iron (Fe)	UG/L	100		300	50	ND	205	ND
Lead (Pb)	UG/L	5	15	55	ND	ND	ND	ND
Magnesium (Mg)	MG/L	3		55	8.1	30.7	21.3	21.9
Manganese (Mn)	UG/L	20		50	55	ND	43.8	ND
Mercury (Hg)	UG/L	1	2	17	ND	ND	ND	ND
Nickel	UG/L	10	100	20	ND	ND	ND	ND
Potassium (K)	MG/L	0.5		51	2.81	4.95	4.04	4.06
Selenium (Se)	UG/L	5	50	20	ND	ND	ND	ND
Silver	UG/L	10		100	20	ND	ND	ND
Sodium (Na)	MG/L	20		51	46.1	125	74.6	74
Thallium	UG/L	1	2	20	ND	ND	ND	ND
Vanadium	UG/L	3		20	ND	ND	ND	ND
Zinc (Zn)	UG/L	50		5000	55	ND	ND	ND
Inorganic Constituents			MCL	SMCL	Min	Max	Mean	Median
Ammonia-N	MG/L	0.031		241	ND	0.172	ND	ND
Asbestos Chrysotile Fibers >10 microns	MFL	0.2	7	1	ND	ND	ND	ND
Bicarbonate (as HCO ₃)	MG/L			51	82	170	127	128
Bromate	UG/L	5	10	238	ND	ND	ND	ND
Bromide	MG/L	0.1		291	ND	0.107	ND	ND
Carbonate (as CO ₃)	MG/L			51	0	3.78	0.304	0
Chloride	MG/L	0.5		500	53	56.1	98.7	80.4
Cyanide	UG/L	100	150	5	ND	ND	ND	ND
Fluoride	MG/L	0.1	2	55	0.114	0.434	0.242	0.254
Nitrate (as NO ₃)	MG/L	0.4	45	293	ND	ND	ND	ND
Nitrite (NO ₂)	MG/L	1.31	3.42	242	ND	ND	ND	ND
Perchlorate	UG/L	4	6	15	ND	ND	ND	ND
Phosphate, Ortho (as PO ₄)	MG/L	0.2		52	ND	ND	ND	ND
Phosphorus	MG/L	0.078		51	ND	0.101	ND	ND
Silica	MG/L	0.625		52	6.47	10.9	8.79	8.61
Sulfate (SO ₄)	MG/L	0.5		500	53	59.6	269	164
Total Nitrogen	MG/L	0.156		51	ND	0.463	0.224	0.252
Organic Constituents, Regulated			MCL	SMCL	Min	Max	Mean	Median
1,1,1-Trichloroethane (1,1,1-TCA)	UG/L	200	0.5	19	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	UG/L	1	0.5	19	ND	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	UG/L	5	0.5	19	ND	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	UG/L	5	0.5	19	ND	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	UG/L	6	0.5	19	ND	ND	ND	ND
1,2,4-Trichlorobenzene	UG/L	5	0.5	19	ND	ND	ND	ND
1,2-Dichlorobenzene (o-DCB)	UG/L	600	0.5	19	ND	ND	ND	ND
1,2-Dichloroethane (1,2-DCA)	UG/L	0.5	0.5	19	ND	ND	ND	ND
1,2-Dichloropropane	UG/L	5	0.5	19	ND	ND	ND	ND
1,4-Dichlorobenzene (p-DCB)	UG/L	5	0.5	19	ND	ND	ND	ND
2,4,5-TP (SILVEX)	UG/L	50	1	18	ND	ND	ND	ND

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2,4-D	UG/L	70	10	18	ND	ND	ND	ND
Alachlor (ALANEX)	UG/L	2	1	18	ND	ND	ND	ND
Atrazine (AATREX)	UG/L	1	0.5	18	ND	ND	ND	ND
Bentazon (BASAGRAN)	UG/L	18	2	18	ND	ND	ND	ND
Benzene	UG/L	1	0.5	19	ND	ND	ND	ND
Benzo(a)pyrene	UG/L	0.2	0.1	18	ND	ND	ND	ND
Bromodichloromethane	UG/L		1	260	ND	24.4	10.8	10.7
Bromoform	UG/L		1	260	ND	12.1	4.52	3.92
Carbofuran (FURADAN)	UG/L	18	5	18	ND	ND	ND	ND
Carbon Tetrachloride	UG/L	0.5	0.5	19	ND	ND	ND	ND
Chlordane	UG/L	0.1	0.1	11	ND	ND	ND	ND
Chlorodibromomethane	UG/L		1	260	ND	33.4	12.5	12.5
Chloroform (Trichloromethane)	UG/L		1	260	ND	23.5	7.22	6.52
cis-1,2-Dichloroethylene (c-1,2-DCE)	UG/L	6	0.5	19	ND	ND	ND	ND
Dalapon	UG/L	200	10	49	ND	ND	ND	ND
Di(2-ethylhexyl) Adipate	UG/L	400	5	18	ND	ND	ND	ND
Di(2-ethylhexyl)phthalate (DEHP)	UG/L	4	3	18	ND	ND	ND	ND
Dibromoacetic Acid (DBAA)	UG/L		1	48	ND	2.32	ND	1.19
Dibromochloropropane (DBCP)	UG/L	0.2	0.01	29	ND	ND	ND	ND
Dichloroacetic Acid (DCAA)	UG/L		1	50	ND	5.48	2.2	2.14
Dichloromethane (Methylene Chloride)	UG/L	5	0.5	19	ND	ND	ND	ND
Dinoseb (DNBP)	UG/L	7	2	18	ND	ND	ND	ND
Diquat	UG/L	20	4	14	ND	ND	ND	ND
Endothall	UG/L	100	45	14	ND	ND	ND	ND
Endrin	UG/L	2	0.1	29	ND	ND	ND	ND
Ethyl Benzene	UG/L	300	0.5	19	ND	ND	ND	ND
Ethylene Dibromide (EDB)	UG/L	0.05	0.02	29	ND	ND	ND	ND
Glyphosate	UG/L	700	25	17	ND	ND	ND	ND
Haloacetic Acids (five) (HAA5)	UG/L	60	1	50	ND	11.2	5.33	5.23
Heptachlor	UG/L	0.01	0.01	11	ND	ND	ND	ND
Heptachlor Epoxide	UG/L	0.01	0.01	11	ND	ND	ND	ND
Hexachlorobenzene	UG/L	1	0.5	29	ND	ND	ND	ND
Hexachlorocyclopentadiene	UG/L	50	1	29	ND	ND	ND	ND
Lindane (gamma-BHC)	UG/L	0.2	0.2	11	ND	ND	ND	ND
meta,para xylenes	UG/L		0.5	19	ND	ND	ND	ND
Methoxychlor	UG/L	30	10	29	ND	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	UG/L	13	3	19	ND	ND	ND	ND
Molinate (ORDRAM)	UG/L	20	2	18	ND	ND	ND	ND
Monobromoacetic Acid (MBAA)	UG/L		1	50	ND	ND	ND	ND
Monochloroacetic Acid (MCAA)	UG/L		2	50	ND	ND	ND	ND
Monochlorobenzene (Chlorobenzene)	UG/L	70	0.5	19	ND	ND	ND	ND
Oxamyl (Vydate)	UG/L	50	20	18	ND	ND	ND	ND
o-Xylene	UG/L		0.5	19	ND	ND	ND	ND
Pentachlorophenol (PCP)	UG/L	1	0.2	18	ND	ND	ND	ND
Picloram	UG/L	500	1	18	ND	ND	ND	ND
Polychlorinated Biphenyls, Total, as DCB	UG/L	0.5	0.5	16	ND	ND	ND	ND
Simazine (PRINCEP)	UG/L	4	1	18	ND	ND	ND	ND
Styrene	UG/L	100	0.5	19	ND	ND	ND	ND
Tetrachloroethylene (PCE)	UG/L	5	0.5	19	ND	ND	ND	ND
Thiobencarb (BOLERO)	UG/L	70	1	18	ND	ND	ND	ND
Toluene	UG/L	150	0.5	19	ND	ND	ND	ND
Total Organic Carbon (TOC)	MG/L		0.3	316	2.12	4.45	2.62	2.6
Total Toxaphene	UG/L	3	1	11	ND	ND	ND	ND
Total Trihalomethanes (TTHMs)	UG/L	80	1	242	ND	76.1	35.5	35.4
trans-1,2-Dichloroethylene (t-1,2-DCE)	UG/L	10	0.5	19	ND	ND	ND	ND
Trichloroacetic Acid (TCAA)	UG/L		1	50	ND	4.97	2.25	2.24
Trichloroethylene (TCE)	UG/L	5	0.5	19	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	UG/L	150	5	19	ND	ND	ND	ND
Trichlorotrifluoroethane (FREON 113)	UG/L	1200	10	19	ND	ND	ND	ND
Vinyl Chloride (VC)	UG/L	0.5	0.5	19	ND	ND	ND	ND
Organic Constituents, Unregulated			MCL	SMCL	Min	Max	Mean	Median
1,1,1,2-Tetrachloroethane	UG/L	0.5		19	ND	ND	ND	ND
1,1-Dichloropropene	UG/L	0.5		19	ND	ND	ND	ND
1,2,3-Trichlorobenzene	UG/L	0.5		19	ND	ND	ND	ND
1,2,3-Trichloropropane	NG/L	0.5		15	ND	ND	ND	ND
1,2,4-Trimethylbenzene	UG/L	0.4		19	ND	ND	ND	ND
1,3,5-Trimethylbenzene	UG/L	0.5		19	ND	ND	ND	ND
1,3-Dichlorobenzene (m-DCB)	UG/L	0.5		19	ND	ND	ND	ND
1,3-Dichloropropane	UG/L	0.5		19	ND	ND	ND	ND
2,2-Dichloropropane	UG/L	0.5		19	ND	ND	ND	ND
2,4,5-T	UG/L	3		18	ND	ND	ND	ND
2,4-DB	UG/L	3		18	ND	ND	ND	ND
2-Chlorotoluene	UG/L	0.5		19	ND	ND	ND	ND
2-Methylisoborneol	NG/L	5		243	ND	15.2	ND	ND
3,5-Dichlorobenzoic Acid	UG/L	3		18	ND	ND	ND	ND
3-Hydroxycarbofuran	UG/L	3		18	ND	ND	ND	ND

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Parameters	Units	DLR*/MDL	Drinking Water Standards ¹	No. of Samples	Raw Water Quality**			
4-Chlorotoluene	UG/L	0.5		19	ND	ND	ND	ND
4-Nitrophenol	UG/L	5		18	ND	ND	ND	ND
Acenaphthylene	UG/L	5		16	ND	ND	ND	ND
Acifluorfen	UG/L	3		18	ND	ND	ND	ND
Aldicarb (TEMIK)	UG/L	3		18	ND	ND	ND	ND
Aldicarb Sulfone	UG/L	4		18	ND	ND	ND	ND
Aldicarb Sulfoxide	UG/L	3		18	ND	ND	ND	ND
Aldrin	UG/L	0.075		11	ND	ND	ND	ND
Anthracene	UG/L	5		18	ND	ND	ND	ND
Baygon	UG/L	0.4		18	ND	ND	ND	ND
Benzo (a) Anthracene	UG/L	10		18	ND	ND	ND	ND
Benzo (b) Fluoranthene	UG/L	10		18	ND	ND	ND	ND
Benzo (ghi) Perylene	UG/L	10		18	ND	ND	ND	ND
Benzo (k) Fluoranthene	UG/L	10		18	ND	ND	ND	ND
Benzyl Butyl Phthalate	UG/L	10		18	ND	ND	ND	ND
Bromobenzene	UG/L	0.5		19	ND	ND	ND	ND
Bromochloromethane	UG/L	0.5		19	ND	ND	ND	ND
Bromomethane (Methyl Bromide)	UG/L	0.5		19	ND	ND	ND	ND
Carbaryl (Sevin)	UG/L	5		18	ND	ND	ND	ND
Chloramben	UG/L	3		18	ND	ND	ND	ND
Chloroethane	UG/L	0.5		19	ND	ND	ND	ND
Chloromethane (Methyl Chloride)	UG/L	0.5		19	ND	ND	ND	ND
Chrysene	UG/L	5		18	ND	ND	ND	ND
cis-1,3-dichloropropene	UG/L	0.5		19	ND	ND	ND	ND
Dibenzo (a,h) anthracene	UG/L	5		18	ND	ND	ND	ND
Dibromomethane	UG/L	0.5		19	ND	ND	ND	ND
Dicamba (BANVEL)	UG/L	1.5		18	ND	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	UG/L	0.5		19	ND	ND	ND	ND
Dichloroprop	UG/L	3		18	ND	ND	ND	ND
Dieldrin	UG/L	0.02		11	ND	ND	ND	ND
Diethylphthalate	UG/L	5		18	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	UG/L	3		19	ND	ND	ND	ND
Dimethyl phthalate	UG/L	5		18	ND	ND	ND	ND
di-n-Butylphthalate	UG/L	5		18	ND	ND	ND	ND
Ethyl-tert-Butyl Ether (ETBE)	UG/L	3		19	ND	ND	ND	ND
Fluorene	UG/L	5		18	ND	ND	ND	ND
Geosmin	NG/L	5		243	ND	54	ND	ND
Hexachlorobutadiene	UG/L	0.5		19	ND	ND	ND	ND
Indeno (1,2,3-cd) Pyrene	UG/L	10		18	ND	ND	ND	ND
Isopropylbenzene (Cumene)	UG/L	0.5		19	ND	ND	ND	ND
MCPA	UG/L	3		18	ND	ND	ND	ND
MCPP	UG/L	3		18	ND	ND	ND	ND
Methiocarb	UG/L	0.4		18	ND	ND	ND	ND
Methomyl	UG/L	2		18	ND	ND	ND	ND
Naphthalene	UG/L	0.5		37	ND	ND	ND	ND
n-Butylbenzene	UG/L	0.5		19	ND	ND	ND	ND
n-Propylbenzene	UG/L	0.5		19	ND	ND	ND	ND
Paraquat	UG/L	20		14	ND	ND	ND	ND
PCB-1016 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
PCB-1221 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
PCB-1232 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
PCB-1242 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
PCB-1248 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
PCB-1254 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
PCB-1260 (as DCB)	UG/L	0.5		18	ND	ND	ND	ND
Phenanthrene	UG/L	5		18	ND	ND	ND	ND
p-Isopropyltoluene	UG/L	0.4		19	ND	ND	ND	ND
Propachlor	UG/L	0.5		29	ND	ND	ND	ND
Pyrene	UG/L	0.5		18	ND	ND	ND	ND
sec-Butylbenzene	UG/L	0.5		19	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME)	UG/L	3		19	ND	ND	ND	ND
tert-Butyl Alcohol (TBA)	UG/L	2		19	ND	ND	ND	ND
Total THM Potential	UG/L	0.5		19	38.4	38.4	38.4	38.4
trans-1,3-dichloropropene	UG/L	0.5		19	ND	ND	ND	ND
Trifluralin	UG/L	0.5		18	ND	ND	ND	ND

NOTES:

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

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

(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.

ND: not detected