

**Three Valleys Municipal Water District
2014 WATER QUALITY REPORT TO TVMWD MEMBER AGENCIES**

WEYMOUTH refers to the Metropolitan Water District's Weymouth Water Treatment Plant in the city of La Verne.
MIRAMAR refers to the Three Valleys Municipal Water District's Miramar Water Treatment Plant in the city of Claremont.

	WEYMOUTH	MIRAMAR	REGULATORY STANDARDS			Major Sources in Drinking Water
	EFFLUENT Range/Average	EFFLUENT Range/Average	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	

SOURCE WATER

% of State Project Water	0	94.325%	NA	NA	NA	
% of Groundwater		5.675%				

PRIMARY STANDARDS - Mandatory Health-Related Standards

CLARITY

Combined Filter Effluent Turbidity (a)	NTU % ≤ 0.3	0.03 (highest) 100%	0.11 (highest) 100%	TT=1 TT (a)	NA	NA	Soil runoff
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MICROBIOLOGICAL

Total Coliform Bacteria (b)	%	ND - 0.3/0,1 distribution system-wide	ND distribution system-wide	5.0	(0)	NA	Naturally present in the environment
Fecal Coliform/ <i>E.coli</i> (c)	(c)	ND distribution system-wide	ND distribution system-wide	(C)	(0)	NA	Human and animal fecal waste
Heterotrophic Plate Count (d)	CFU/ mL	TT	TT	TT	NA	NA	Naturally present in the environment
<i>Cryptosporidium</i>	Oocyst 200 L	ND	ND	TT	(0)	NA	Human and animal fecal waste
<i>Giardia</i>	Cysts 200 L	ND	ND	TT	(0)	NA	Human and animal fecal waste

ORGANIC CHEMICALS

Pesticides/PCBs

	Units	(e)					
Alachlor	ppb	ND	ND	2	4	1	Runoff from herbicide used on row crops
Atrazine	ppb	ND	ND	1	0.15	0.5	Runoff from herbicide used on row crops and along highways
Bentazon	ppb	ND	ND	18	200	2	Runoff/leaching from herbicide used on rice, alfalfa, grapes
Carbofuran	ppb	ND	ND	18	1.7	5	Leaching of soil fumigant used on rice, alfalfa and grapes
Chlordane	ppt	ND	ND	100	30	100	Residue of banned insecticide
2,4-D	ppb	ND	ND	70	20	10	Runoff from herbicide used on row crops, range land, lawns
Dalapon	ppb	ND	ND	200	790	10	Runoff from herbicide used on rights of way, crops and landscapes
Dibromochloropropane (DBCP)	ppt	ND	ND	200	1.7	10	Banned nematocide that may still be present in soils due to runoff/leaching
Dinoseb	ppb	ND	ND	7	14	2	Runoff from herbicide used on soybeans, vegetables and fruits
Diquat	ppb	ND	ND	20	15	4	Runoff from herbicide used for terrestrial and aquatic weeds
Endothall	ppb	ND	ND	100	94	45	Runoff from herbicide used for terrestrial and aquatic weeds
Endrin	ppb	ND	ND	2	1.8	0.1	Residue of banned insecticide and rodenticide
Ethylene dibromide (EDB)	ppt	ND	ND	50	10	20	Discharge from petroleum refineries; underground gas tank leaks
Glyphosate	ppb	ND	ND	700	900	25	Runoff from herbicide use
Heptachlor	ppt	ND	ND	10	8	10	Residue of banned insecticide
Heptachlor Epoxide	ppt	ND	ND	10	6	10	Breakdown product of heptachlor
Lindane	ppt	ND	ND	200	32	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	ppb	ND	ND	30	0.09	10	Runoff/leaching from insecticide uses
Molinate (Ordram)	ppb	ND	ND	20	1	2	Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	ND	ND	50	26	20	Runoff/leaching from insecticide uses
Pentachlorophenol (PCP)	ppb	ND	ND	1	0.3	0.2	Discharge from wood preserving factories & other insecticide uses
Picloram	ppb	ND	ND	500	500	1	Herbicide runoff
Polychlorinated Biphenyls (PCBs)	ppt	ND	ND	500	90	500	Runoff from landfills; discharge of waste chemicals
Simazine	ppb	ND	ND	4	4	1	Herbicide runoff
2,4,5-TP (Silvex)	ppb	ND	ND	50	3	1	Residue of banned herbicide
Thiobencarb (e)	ppb	ND	ND	70	70	1	Runoff/leaching from herbicide used on rice
Toxaphene	ppb	ND	ND	3	0.03	1	Runoff/leaching from insecticide used on cotton and cattle

Semi-Volatile Organic Chemicals

	Units	(e)					
Acrylamide	NA	TT	TT	TT	(0)	NA	Added to water during sewage/wastewater treatment
Benzo(a)pyrene	ppt	ND	ND	200	7	100	Leaching from linings of water storage tanks and distribution mains
Di(2-ethylhexyl) adipate	ppb	ND	ND	400	200	5	Discharge from chemical factories
Di(2-ethylhexyl) phthalate	ppb	ND	ND	4	12	3	Discharge from chemical factories; inert ingredient in pesticides
Epichlorohydrin	NA	TT	TT	TT	(0)	NA	Water treatment chemical impurities
Hexachlorobenzene	ppb	ND	ND	1	0.03	0.5	Discharge from metal refineries & agricultural factories; wastewater chlorination reaction by-product
Hexachlorocyclopentadiene	ppb	ND	ND	50	2	1	Discharge from chemical factories
2,3,7,8-TCDD (Dioxin)	ppq	ND	ND	30	0.05	5	Emissions from waste incineration; discharge from chemical factories

Volatile Organic Chemicals

Benzene	ppb	ND	ND	1	0.15	0.5	Plastic factory discharge; gas tanks and landfill leaching
Carbon Tetrachloride	ppt	ND	ND	500	100	500	Discharge from chemical plants and other industrial activities
1,2-Dichlorobenzene	ppb	ND	ND	600	600	0.5	Discharge from industrial chemical factories
1,4-Dichlorobenzene	ppb	ND	ND	5	6	0.5	Discharge from industrial chemical factories
1,1-Dichloroethane	ppb	ND	ND	5	3	0.5	Extraction & degreasing solvent; fumigant
1,2-Dichloroethane	ppt	ND	ND	500	400	500	Discharge from industrial chemical factories
1,1-Dichloroethylene	ppb	ND	ND	6	10	0.5	Discharge from industrial chemical factories
cis -1,2-Dichloroethylene	ppb	ND	ND	6	100	0.5	Industrial chemical factory discharge; biodegradation byproduct of TCE/PCE groundwater contamination
trans -1,2-Dichloroethylene	ppb	ND	ND	10	60	0.5	Industrial chemical factory discharge; biodegradation byproduct of TCE/PCE groundwater contamination
Dichloromethane (methylene chloride)	ppb	ND	ND	5	4	0.5	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane	ppb	ND	ND	5	0.5	0.5	Discharge from industrial chemical factories; primary component of some fumigants
1,3-Dichloropropene	ppt	ND	ND	500	200	500	Runoff/leaching from nematocide used on croplands
Ethylbenzene	ppb	ND	ND	300	300	0.5	Discharge from petroleum refineries; industrial chemical factories
Methyl-tert-butyl-ether (MTBE)	ppb	ND	ND	13	13	3	Leaking underground storage tanks; discharge from petroleum and chemical factories
Monochlorobenzene	ppb	ND	ND	70	200	0.5	Discharge from industrial, agricultural chemical factories and dry-cleaning facilities
Styrene	ppb	ND	ND	100	0.5	0.5	Discharge from rubber and plastics factories; leaching from landfills
1,1,2,2-Tetrachloroethane	ppb	ND	ND	1	0.1	0.5	Discharge from industrial, agricultural chemical factories; solvent used in productions of TCE
Tetrachloroethylene (PCE)	ppb	ND	ND	5	0.06	0.5	Discharge from factories, dry cleaners and auto shops (metal degreaser)
Toluene	ppb	ND	ND	150	150	0.5	Discharge from petroleum and chemical refineries; underground gas tank leaks
1,2,4-Trichlorobenzene	ppb	ND	ND	5	5	0.5	Discharge from textile-finishing factories
1,1,1-Trichloroethane	ppb	ND	ND	200	1000	0.5	Discharge from metal degreasing sites; manufacture of food wrappings
1,1,2-Trichloroethane	ppb	ND	ND	5	0.3	0.5	Discharge from industrial chemical factories
Trichloroethylene (TCE)	ppb	ND	ND	5	1.7	0.5	Discharge from metal degreasing sites and other factories
Trichlorofluoromethane (Freon 11)	ppb	ND	ND	150	700	5	Discharge from industrial factories; degreasing solvent; propellant and refrigerant
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ppm	ND	ND	1.2	4	0.01	Discharge from metal degreasing sites and other factories; dry-cleaning solvent; refrigerant
Vinyl chloride	ppt	ND	ND	500	50	500	Leaching from PVC piping; plastics factory discharge; biodegradation byproduct of TCE/PCE groundwater
Xylenes	ppm	ND	ND	1.75	1.8	0.0005	Discharge from petroleum and chemical refineries; fuel solvent

INORGANIC CHEMICALS

Aluminum	ppb	70 - 230/136	ND	1000	600	50	Residue from water treatment process; erosion of natural deposits
Antimony	ppb	ND	ND	6	20	6	Discharge from petroleum refineries; fire retardant; solder; electronics
Arsenic	ppb	ND	ND	10	0.004	2	Erosion of natural deposits; glass & electronics production wastes
Asbestos (f)	MFL	ND	ND	7	7	0.2	Internal corrosion of asbestos cement pipes; erosion of natural deposits
Barium	ppb	112	ND	1000	2000	100	Discharge of oil drilling wastes and from metal refineries; erosion of natural deposits
Beryllium	ppb	ND	ND	4	1	1	Discharge from metal refineries; electrical, aerospace and defense industries
Cadmium	ppb	ND	ND	5	0.04	1	Internal corrosion of galvanized pipes; erosion of natural deposits; runoff from waste batteries and paints
Chromium (g)	ppb	ND	ND	50	(100)	10	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Copper (h)	ppm	ND	ND	AL=1.3	0.3	0.05	Internal corrosion of household pipes; erosion of natural deposits; leaching from wood preservatives
Cyanide	ppb	ND	ND	150	150	100	Discharge from steel/metal, plastic and fertilizer factories
Fluoride (i)	ppm	0.8 (treatment related)	0.16 (naturally occurring)	2	1	0.1	Erosion of natural deposits; water additive that promotes strong teeth
Lead (h)	ppb	ND	ND	AL=15	0.2	5	Internal corrosion of household pipes erosion of natural deposits
Mercury	ppb	ND	ND	2	1.2	1	Erosion of natural deposits; discharge from factories; runoff from landfills
Nickel	ppb	ND	ND	100	12	10	Erosion of natural deposits; discharge from metal factories
Nitrate (as N) (j)	ppm	ND	ND - 0.77/0.51	10	10	0.4	Runoff & leaching from fertilizer use; leaching from sewage; erosion of natural deposits
Nitrite (as N)	ppm	ND	ND	1	1	0.4	Runoff & leaching from fertilizer use; leaching from sewage; erosion of natural deposits
Perchlorate (k)	ppb	ND	ND	6	6	4	Inorganic chemical used in rocket propellant, fireworks, explosives
Selenium	ppb	ND	ND	50	30	5	Discharge from petroleum refineries, mines; erosion of natural deposits
Thallium	ppb	ND	ND	2	0.1	1	Leaching from ore-processing sites; discharge from electronics factories

RADIOLOGICALS

Gross Alpha Particle Activity	pCi/L	ND - 4/ND	ND	15	(0)	3	Erosion of natural deposits
Gross Beta Particle Activity (h)	pCi/L	4 - 6/5	ND	50	(0)	4	Decay of natural and man-made deposits
Combined Radium (i)	pCi/L	ND	ND	5	(0)	NA	Erosion of natural deposits
Radium 226	pCi/L	ND	ND	NA	0.05	1	Erosion of natural deposits
Radium 228	pCi/L	ND	ND	NA	0.019	1	Erosion of natural deposits
Strontium-90	pCi/L	ND	0.192	8	0.35	2	Decay of natural and man-made deposits
Tritium	pCi/L	ND	154	20,000	400	1,000	Decay of natural and man-made deposits
Uranium	pCi/L	2 - 3/3	ND	20	0.43	1	Erosion of natural deposits

DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCTS PRECURSORS

Total Trihalomethanes (TTHM) (m)	ppb	12 - 48/47 Distribution system-wide	29.2 - 49.2/38.58 Distribution system-wide	80	NA	1	By-product of drinking water disinfection
Haloacetic Acids (HAA5) (m)	ppb	2.0 - 23/17 Distribution system-wide	9.06 - 14.7/11.55 Distribution system-wide	60	NA	1	By-product of drinking water disinfection
Total Chlorine Residual	ppm	1.3 - 2.9/2.3 Distribution system-wide	2.46 - 2.78/2.63 Distribution system-wide	[4.0]	[4.0]	NA	Drinking water disinfectant added for treatment
DBP Precursor Control (TOC)	ppm	TT	1.23 - 1.40/1.30	TT	NA	0.30	Various natural and man-made sources

SECONDARY STANDARDS - Aesthetic Standards							
Aluminum	ppb	70 - 230/136	ND	200	600	50	Residue from water treatment processes; natural deposits, erosion
Chloride	ppm	86 - 92/89	88	500	NA	NA	Runoff/leaching from natural deposits; seawater influence
Color	units	1	ND	15	NA	NA	Naturally occurring organic materials
Copper (h)	ppm	ND	ND	1	0.3	0.05	Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching
Foaming Agents-MBAS	ppb	ND	ND	500	NA	NA	Municipal and industrial waste discharges
Iron	ppb	ND	ND	300	NA	100	Leaching from natural deposits; industrial wastes
Manganese	ppb	ND	ND	50	NL=500	20	Leaching from natural deposits
Methyl tert-butyl-ether (MTBE) (e,f)	ppb	ND	ND	5	13	3	Gasoline discharges from watercraft engines
Odor Threshold	TON	2	1	3	NA	1	Naturally occurring organic materials
Silver	ppb	ND	ND	100	NA	10	Industrial discharges
Specific Conductance	µS/cm	964 - 1010/987	540 - 580/558	1,600	NA	NA	Substances that form ions when in water; seawater influence
Sulfate	ppm	227 - 238/233	51	500	NA	0.5	Runoff/leaching from natural deposits; industrial wastes
Thiobencarb (e)	ppb	ND	ND	1	70	1	Runoff/leaching from rice herbicide
Total Dissolved Solids	ppm	604 - 641/623	290 - 340/316	1,000	NA	NA	Runoff/leaching from natural deposits; seawater influence
Turbidity (Monthly) (a)	NTU	ND	0.03 - 0.11/0.04	5	NA	NA	Soil runoff
Zinc	ppm	ND	ND	5.0	NA	0.05	Runoff/leaching from natural deposits; industrial wastes

OTHER PARAMETERS							
Alkalinity	ppm	127 - 128/128	83 - 93/87	NA	NA	NA	Measure of water quality
Boron	ppb	110	120 - 160/140	NL=1,000	NA	100	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	74	25 - 29/27	NA	NA	NA	Measure of water quality
Chlorate	ppb	102	ND	NL=800	NA	20	By-product of drinking water chlorination; industrial processes
Chromium VI (I)	ppb	ND	ND	NA	0.02	1	Industrial waste discharge; could be naturally present as well
Corrosivity (o) (as Aggressiveness Index)	Al	12.5	11.99 - 12.31/12.14	NA	NA	NA	Elemental balance in water; affected by temperature, other factors
Corrosivity (n) (as Saturation Index)	SI	0.55 - 0.63/0.59	0.17 - 0.59/0.34	NA	NA	NA	Elemental balance in water; affected by temperature, other factors
Hardness (total)	ppm	284 - 294/289	110	NA	NA	NA	Measure of water quality
Magnesium	ppm	25 - 26/25	9.4	NA	NA	NA	Measure of water quality
pH	pH units	8.1	8.01 - 8.78/8.53	NA	NA	NA	Measure of water quality
Potassium	ppm	4.4 - 4.7/4.6	2.3 - 2.7/2.5	NA	NA	NA	Measure of water quality
Radon	pCi/L	ND	NR	NA	NA	100	Naturally occurring, comes from decay of uranium in nearly all soils
Sodium	ppm	89 - 96/93	64	NA	NA	NA	Measure of water quality
Total organic carbon (TOC)	ppm	2.4 - 2.7/2.5	1.0 - 2.2/1.4	TT	NA	0.30	Various natural and man-made sources
Vanadium	ppb	ND	3.8 - 5/4.4	NL=50	NA	3	Naturally occurring; industrial waste discharge
N-Nitrosodimethylamine (NDMA)	ppb	ND	ND	NL=10	3	2	By-product of drinking water chlorination; industrial processes
Dichlorodifluoromethane (Freon 12)	ppb	ND	ND	NL=1,000	NA	0.5	Industrial waste discharge
Ethyl-tert-butyl-ether (ETBE)	ppb	ND	ND	NA	NA	3	Used as gasoline additive
tert-Amyl-methyl-ether (TAME)	ppb	ND	ND	NA	NA	3	Used as gasoline additive
tert-Butyl alcohol (TBA)	ppb	ND	ND	NL=12	NA	2	MTBE breakdown product; used as gasoline additive
Trichloropropane (1,2,3-TCP)	ppb	ND	ND	NL=.005	0.0007	0.005	Industrial waste discharge and pesticide uses

KEY TO ABBREVIATIONS			
AL	= Action level	NR	= Not Required
CFU/ml	= Colony Forming Units per milliliter	NTU	= Nephelometric Turbidity Units
DBP	= Disinfection By-Products	pCi/L	= PicoCuries per liter
DLR	= Detection Limits for Purposes of Reporting	PHG	= Public Health Goal
MCL	= Maximum Contaminant Level	ppb	= parts per billion/micrograms per liter (ug/L)
MCLG	= Maximum Contaminant Level Goal	ppm	= parts per million/milligrams per liter (mg/L)
MFL	= million fibers per liter	ppq	= parts per quadrillion (pg/L)
MRDL	= Maximum Residual Disinfectant Level	ppt	= parts per trillion/nanograms per liter (ng/L)
MRDLG	= Maximum Residual Disinfectant Level Goal	RAA	= Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all the samples collected within a twelve-month period.
MPN	= Most Probable Number	Si	= Saturation Index (Langelier)
NA	= Not Applicable	TON	= Threshold Odor Number
NC	= Not Collected	TT	= Treatment Technique
ND	= None Detected		
NL	= Notification Level		

- a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU at anytime. Turbidity is a measure of the cloudiness of water and is a good indicator of the water quality and filtration performance. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.
- 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. In 2014, 7,641 samples were analyzed from MWD (6 samples were positive for total coliforms) and 848 samples were analyzed from TVMWD (0 samples were positive for total coliform). The MCL was not violated.
- c) *E. coli* MCL: The occurrence of two consecutive total coliform-positive samples, one of which contained *E. coli*, constitutes an acute MCL violation. The MCL was not violated.
- d) All distribution system 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) Results are from 2012 annual monitoring. Metropolitan's required triennial monitoring (2014-2016) will be performed in 2015.
- f) Data are from samples collected in 2011 and reported one every nine-year compliance cycle until the next samples
- g) MWD's chromium VI reporting level is 0.03 ppb which is below the state DLR of 1 ppb. Data above MWD's reporting level and below the DLR are reported as ND in this report - available upon request.
- h) As a wholesaler, MWD and TVMWD are not required to collect samples at the consumers' tap under the Lead and Copper Rule.
- i) MWD and TVMWD were in compliance with all provisions of the State's Fluoridation System Requirements.
- j) State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.
- k) Perchlorate was not detected at MWD's reporting level of 2 ppb, which is below the state DLR of 4 ppb.
- l) SWRCB considers 50 pCi/L to be the level of concern for beta particles.
- m) In 2014, TVMWD was in compliance with all provisions of the both the Stage 1 and Stage 2 Disinfection/Disinfection By-Products (D/DBP) Rule. Stage 2 of the D/DBPR monitoring began in the 2nd quarter of 2012. Compliance was based on the RAA.
- n) SI measures the tendency for a water to precipitate or dissolve calcium carbonate (a natural mineral in water). Water with SI <-2.0 is highly corrosive and would be corrosive to almost all materials found in a typical water system. SI between -2.0 to 0 indicates a balanced water and SI >0.5 is scale forming.
- o) AI measures the aggressiveness of water transported through pipes. Water with AI <10.0 is highly aggressive and would be very corrosive to almost all materials found in a typical water system. AI ≥ 12.0 indicates non-aggressive water. AI between 10.0 and 11.9 indicates moderately aggressive water.