Manchester Water Works
140th Annual Report
2011

Finished Water Quality
2011 Year-End Average Results

1. Regulated Health Related Contaminants

Contaminant	Maximum Contaminant Level	MWW Level	Units
a. Microbiological			
Total Coliform	A	A	P/A
Fecal Coliform	A	A	P/A
Giardia	0.29*	ND	Cysts/100L
Cryptosporidium	0.29*	ND	
Heterotrophic Plate Count	>200	11	CFU
b. Clarity			
Turbidity (POE)	0.5	0.06	NTU
Turbidity (Avg. system values)	0.5	0.17	NTU
c. Inorganic			
Arsenic	0.01	ND	mg/L
Antimony	0.006	ND	mg/L
Barium	2.0	0.0135	mg/L
Beryllium	0.004	ND	mg/L
Cadmium	0.005	ND	mg/L
Chromium	0.1	ND	mg/L
Copper	1.3*	ND	mg/L
Cyanide (as Free)	0.2	ND	mg/L
Cyanide, Total	0.2	ND	
Fluoride	4.0	0.57	mg/L
Lead	0.015*	ND	mg/L
Mercury	0.002	ND	mg/L
Nitrate (as N)	10	ND	mg/L
Nitrite (as N)	1	ND	mg/L
Nitrate + Nitrite (as N)		ND	mg/L
Selenium	0.05	ND	mg/L
Thallium	0.002	ND	mg/L
d. Volatile Organics			
Benzene	0.005	ND	mg/L
Carbon tetrachloride	0.005	ND	mg/L
1,2 dichloroethane	0.005	ND	mg/L
Trichloroethene	0.005	ND	mg/L
1,4 dichlorobenzene	0.075	ND	mg/L
1,1 dichloroethene	0.007	ND	mg/L

Manchester Water Works
140th Annual Report
2011

Contaminant	Maximum Contaminant Level	MWW Level	Units
1,1,1 trichloroethane	0.2	ND	mg/L
Vinyl chloride	0.002	ND	mg/L
Cis 1,2 dichloroethene	0.07	ND	mg/L
1,2 dichloropropane	0.005	ND	mg/L
Ethylbenzene	0.7	ND	mg/L
Chlorobenzene	0.1	ND	mg/L
1,2 dichlorobenzene	0.6	ND	mg/L
Styrene	0.1	ND	mg/L
Tetrachloroethene	0.005	ND	mg/L
Toluene	1	ND	mg/L
Trans 1,2 dichloroethene	0.1	ND	mg/L
Xylene, Total	10	ND	mg/L
Methyl-t-butylether (MtBE)	0.013	ND	mg/L
e. Radionuclides			
Gross Alpha	15	ND	pCi/L
Gross Beta	4 mrem/yr	ND	pCi/L
Uranium	0.030	0.078	ug/L
Radium 226 & 228	5	ND	pCi/L
f. Disinfection By-Products (Average system values)			
Total Trihalomethanes	0.080	0.0014	mg/L
Haloacetic Acid	0.060	0.0029	mg/L
Bromate	10 ppb	<1.0	mg/L
g. Synthetic Organics			
Endrin	0.002	ND	mg/L
Lindane	0.0002	ND	mg/L
Methoxychlor	0.04	ND	mg/L
Pentachlorophenol	0.001	ND	mg/L
Polychlorinated Biphenyls	0.0005	ND	mg/L
Toxaphene	0.003	ND	mg/L
2,4,5 TP (Silvex)	0.05	ND	mg/L
2,4 D	0.07	ND	mg/L
h. Other Synthetic Organics			
Benzo(a)pyrene	0.0002	ND	mg/L
Di(ethylhexyl)phatalate	0.006	ND	mg/L
Hexachlorobenzene	0.001	ND	mg/L
Hexachlorocylopentadiene	0.05	ND	mg/L
Ethylene Dibromide (EDB)	0.00005	ND	mg/L
Chlorodane	0.0002	ND	mg/L

Manchester Water Works
140th Annual Report
2011

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Dicamba	0.0004	ND	mg/L
Dinoseb	0.0007	ND	mg/L
Picloram	0.5	ND	mg/L
Alachlor	0.0002	ND	mg/L
i. Other Synthetic Organics			
Aldrin	0.0001	ND	mg/L
Atrazine	0.0003	ND	mg/L
Butachlor	0.0002	ND	mg/L
Di(2-ethylexyl)adipate	0.4	ND	mg/L
Dieldrin	0.007	ND	mg/L
Heptachlor	0.00004	ND	mg/L
Metoachlor		ND	mg/L
Metribuzin		ND	mg/L
Propachlor		ND	mg/L
Simazine	0.004	ND	mg/L
3-Hydroxycarbofuran		ND	mg/L
Aldicarb Sulfone		ND	mg/L
Aldicarb Sulfoxide		ND	mg/L
Aldicarb		ND	mg/L
Carbaryl		ND	mg/L
Carbofuran	0.04	ND	mg/L
Methiocarb		ND	mg/L
Methomyl		ND	mg/L
Oxamyl (Vydate)	0.200	ND	mg/L
Propoxur (Baygon)		ND	mg/L
Glyphosate	0.700	ND	mg/L

Manchester Water Works
140th Annual Report
2011

2. Regulated Secondary Contaminants Aesthetic Qualities

Contaminant	Maximum Contaminant Level	MWW Level	Units
Aluminum	0.05	<0.05	mg/L
Chloride	250	34.5	mg/L
Color	15	<1	mg/L
Iron	0.3	<0.010	mg/L
Manganese	0.05	0.025	mg/L
pH	6.5 - 8.5	7.80	mg/L
Silver	0.01	ND	mg/L
Sulfate	500	17.8	mg/L
Zinc	5	0.029	mg/L
Sodium	100 – 250	35.5	mg/L
UV-254		0.029	cm^{-}

3. Unregulated Contaminants

Contaminant	Maximum Contaminant Level	MWW Level	Units
a. Unregulated Organics			
Chloroform		0.0012	mg/L
Bromobenzene		ND	mg/L
Bromodichloromethane		ND	mg/L
Bromoform		ND	mg/L
Bromomethane		ND	mg/L
Chlorobenzene		ND	mg/L
Chloroethane		ND	mg/L
Chloromethane		ND	mg/L
2-Chlorotuluene		ND	mg/L
4-Chlorotoluene		ND	mg/L
Dibromomethane		ND	mg/L
1,2-Dibromo-3-Chloropropane		ND	mg/L
1,3 Dichlorobenzene		ND	mg/L
1,1-Dichloroethane		ND	mg/L
Trans 1,3-Dichloropropane		ND	mg/L
1,1,2,2-Tetracholoroethane		ND	mg/L
1,1,1,2-Trichloroethane		ND	mg/L
1,1,2-Trichloropropane		ND	mg/L
Dichlorodifluoromethane		ND	mg/L

Manchester Water Works
140th Annual Report
2011

Contaminant	Maximum Contaminant Level	MWW Level	Units
Bromomethane		ND	mg/L
Trichlorofluoromethane		ND	mg/L
Diethyl Ether		ND	mg/L
Acetone		ND	mg/L
Tert-Butyl-Alcohol (TBA)		ND	mg/L
Methylene chloride		ND	mg/L
Carbon disulfide		ND	mg/L
Ethyl-t-butyl ether (ETBE)		ND	mg/L
Isopropyl ether (DIPE)		ND	mg/L
Tert-amyl methyl ether (TAME)		ND	mg/L
Vinyl acetate		ND	mg/L
2-Butanone (MEK)		ND	mg/L
Bromochloromethane		ND	mg/L
Tetrahydrofuran (THF)		ND	mg/L
Bromodichloromethane		ND	mg/L
4-Methyl-2-pentanone (MIBK)		ND	mg/L
Cis-1,3-Dichloropropene		ND	mg/L
2-Hexanone		ND	mg/L
1 Dibromochloromethane		ND	mg/L
1,2-Dibromoethane (EDB)		ND	mg/L
Bromoform		ND	mg/L
IsoPropylbenzene		ND	mg/L
Bromobenzene		ND	mg/L
n-Propylbenzene		ND	mg/L
1,3,5-Trimethylbenzene		ND	mg/L
tert-Butylbenzene		ND	mg/L
1,2,4-Trimethylbenzene		ND	mg/L
sec-Butylbenzene		ND	mg/L
p-Isopropyltoluene		ND	mg/L
n-Butylbenzene		ND	mg/L
1,2-Dibromo-3-chloropropane		ND	mg/L
1,3,5-Trichlorobenzene		ND	mg/L
1,2,4-Trichlorobenzene		ND	mg/L
Hexachlorbutadiene		ND	mg/L
Naphthalene		ND	mg/L
1,2,3-Trichlorobenzene		ND	mg/L

Manchester Water Works
140th Annual Report
2011

Contaminant	Maximum Contaminant Level	MWW Level	Units
b. Unregulated radionuclides			
Radon		<100	pCi/L
Uranium	0.030	0.078	ug/L
c. Unregulated Secondary Contaminants			
Alkalinity		28.8	mg/L
Free Ammonia		0.09	mg/L
Chlorine (total)		2.18	mg/L
Monochloramine		2.11	mg/L
Calcium Hardness		4.5	mg/L
Total Hardness		13.4	mg/L
Orthophosphate		1.40	mg/L
Specific Conductance		229	uS/cm
TOC		1.8	mg/L
Magnesium		<1	mg/L
Nickel		ND	mg/L

* Denotes Action Level

Key to Abbreviations

Maximum Contaminant Level (MCL)	State of NH Department of Environmental Services
MWW Level	Typical level of contaminant in Manchester Water Works drinking water
Units	The scientific unit of measure
ND	Not detected
ug/L	Micrograms per liter or parts per billion
mg/L	Milligrams per liter or parts per million
NTU	Nephalometric Turbidity Units, a measure of clarity
pCi/L	Picocuries per liter, a measure of radioactivity
uS/cm	Microsimens per centimeter, a measure of electrical conductivity
A or P	Absence or Presence of bacteria with no more than 5% of samples being positive
Mfl	Million Asbestos Fibers per liter