

PATUXENT WATER FILTRATION PLANT TAP WATER ANALYSIS – 2003

PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
<u>PHYSICAL</u>					
Alkalinity	mg/L	33	36	30	
Color	Units	1	2	0	
Hardness	mg/L	62	67	58	
pH	Units	8.2	8.3	8.0	
Temperature	° C	14.9	26.2	6.1	
Threshold Odor	Units	1.3	1.4	1.2	
Turbidity	NTU	0.06	0.08	0.05	TT
<u>METALS</u>					
Aluminum	µ g/L	47	124	21	
Antimony	µ g/L	<2	<2	n/d	6
Arsenic	µ g/L	n/d	n/d	n/d	50 ¹
Barium	µ g/L	23	27	20	2000
Beryllium	µ g/L	n/d	n/d	n/d	4
Cadmium	µ g/L	n/d	n/d	n/d	5
Calcium	mg/L	18.1	19.6	15.2	
Chromium	µ g/L	<2	<2	<2	100
Copper	µ g/L	16	30	<10	1300 ²
Iron	µ g/L	13	42	n/d	
Lead	µ g/L	n/d	n/d	n/d	15 ²
Magnesium	mg/L	4.0	4.3	3.9	
Manganese	µ g/L	<10	29	<10	
Mercury	µ g/L	n/d	n/d	n/d	2
Nickel	µ g/L	<2	<2	n/d	
Potassium	mg/L	2.7	3.2	2.1	
Selenium	µ g/L	<2	<2	<2	50
Silicon	mg/L	2.7	3.3	1.3	
Silver	µ g/L	n/d	n/d	n/d	
Sodium	mg/L	9.9	15.8	6.6	
Thallium	µ g/L	n/d	<1	n/d	2
Zinc	µ g/L	<5	<5	n/d	
<u>INORGANICS</u>					
Boron	mg/L	<0.020	<0.020	<0.020	
Chloride	mg/L	25.4	44.2	9.0	
Chlorine	mg/L	1.8	2.1	1.5	
Fluoride	mg/L	1.01	1.13	0.69	4
Nitrate as Nitrogen	mg/L	1.41	1.75	1.04	10
Nitrite as Nitrogen	mg/L	n/d	<0.02	n/d	1
Phosphorus	mg/L	<0.05	<0.05	<0.05	
Sulfate	mg/L	12.2	21.1	<5	
<u>BACTERIOLOGICAL (DISTRIBUTION SYSTEM)</u>					
% of Samples Total Coliform Positive (out of 4672 samples)		0.48	2.43	0	5
% of Samples E. coli Positive (out of 4672 samples)		0.11	1.08	0	
Number of E. coli Positive Repeat Samples		0	0	0	0

Revised 3/1/04

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PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
DISINFECTION BYPRODUCTS ³ & PRECURSOR					
Haloacetic Acids, Total	μ g/L	40.1	56.6	22.3	60 ³
Organic Carbon, Total	mg/L	1.57	1.95	0.98	
Trihalomethanes, Total	μ g/L	46.3	74.9	23.7	80 ³
PESTICIDES & SYNTHETIC ORGANIC CONTAMINANTS (SOC)					
2,3,7,8-TCDD (dioxin)	pg/L	n/d	<5	n/d	30
2,4,5 TP (Silvex)	μ g/L	n/d	n/d	n/d	50
2,4-D	μ g/L	n/d	n/d	n/d	70
3-Hydroxycarbofuran	μ g/L	n/d	n/d	n/d	
Alachlor	μ g/L	n/d	n/d	n/d	2
Aldicarb	μ g/L	n/d	n/d	n/d	3
Aldicarb sulfone	μ g/L	n/d	n/d	n/d	2
Aldicarb sulfoxide	μ g/L	n/d	n/d	n/d	4
Aldrin	μ g/L	n/d	n/d	n/d	
Atrazine	μ g/L	<0.5	0.53	n/d	3
Benzo(a)pyrene	μ g/L	n/d	n/d	n/d	0.2
Butachlor	μ g/L	n/d	n/d	n/d	
Carbaryl	μ g/L	n/d	n/d	n/d	
Carbofuran	μ g/L	n/d	n/d	n/d	40
Chlorinated biphenyls (PCBs)	μ g/L	n/d	n/d	n/d	0.5
Chlordane	μ g/L	n/d	n/d	n/d	2
Dalapon	μ g/L	n/d	n/d	n/d	200
1,2-Dibromo3-chloropropane(DBCP)	μ g/L	n/d	n/d	n/d	0.2
Di(2-ethylhexyl)adipate	μ g/L	<0.5	<0.5	n/d	400
Di(2-ethylhexyl)phthalate	μ g/L	1.58	5.82	n/d	6
Dicamba	μ g/L	n/d	n/d	n/d	
Dieldrin	μ g/L	n/d	n/d	n/d	
Dinoseb	μ g/L	n/d	n/d	n/d	7
Diquat	μ g/L	n/d	n/d	n/d	20
1,2-Dibromoethane (EDB)	μ g/L	n/d	n/d	n/d	0.05
Endothall	μ g/L	n/d	n/d	n/d	100
Endrin	μ g/L	n/d	n/d	n/d	2
Glyphosate	μ g/L	n/d	n/d	n/d	700
Heptachlor	μ g/L	n/d	n/d	n/d	0.4
Heptachlor Epoxide	μ g/L	n/d	n/d	n/d	0.2
Hexachlorobenzene	μ g/L	n/d	n/d	n/d	1
Hexachlorocyclopentadiene	μ g/L	<0.5	<0.5	n/d	50
Lindane	μ g/L	n/d	n/d	n/d	0.2
Methomyl	μ g/L	n/d	n/d	n/d	
Methoxychlor	μ g/L	n/d	n/d	n/d	40
Metolachlor	μ g/L	n/d	n/d	n/d	
Metribuzin	μ g/L	n/d	n/d	n/d	
Oxamyl (vydate)	μ g/L	n/d	n/d	n/d	200
Pentachlorophenol	μ g/L	n/d	n/d	n/d	1
Picloram	μ g/L	n/d	n/d	n/d	500
Propachlor	μ g/L	n/d	n/d	n/d	
Simazine	μ g/L	<0.5	<0.5	n/d	4
Toxaphene	μ g/L	n/d	n/d	n/d	3

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PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
VOLATILE ORGANIC CONTAMINANTS (VOC)					
1,1,1,2-Tetrachloroethane	μ g/L	n/d	n/d	n/d	
1,1,1-Trichloroethane	μ g/L	n/d	n/d	n/d	200
1,1,2,2-Tetrachloroethane	μ g/L	<0.5	<0.5	n/d	
1,1,2-Trichloroethane	μ g/L	<0.5	<0.5	n/d	5
1,1-Dichloroethane	μ g/L	n/d	n/d	n/d	
1,1-Dichloroethene	μ g/L	<0.5	<0.5	n/d	7
1,1-Dichloropropene	μ g/L	n/d	n/d	n/d	
1,2,3-Trichlorobenzene	μ g/L	<0.5	<0.5	n/d	
1,2,3-Trichloropropane	μ g/L	<0.5	<0.5	n/d	
1,2,4-Trichlorobenzene	μ g/L	<0.5	<0.5	n/d	70
1,2,4-Trimethylbenzene	μ g/L	<0.5	<0.5	n/d	
o-Dichlorobenzene	μ g/L	<0.5	<0.5	n/d	600
1,2-Dichloroethane	μ g/L	n/d	n/d	n/d	5
1,2-Dichloropropane	μ g/L	n/d	n/d	n/d	5
1,3,5-Trimethylbenzene	μ g/L	n/d	n/d	n/d	
m-Dichlorobenzene	μ g/L	<0.5	<0.5	n/d	
1,3-Dichloropropane	μ g/L	n/d	n/d	n/d	
p-Dichlorobenzene	μ g/L	<0.5	<0.5	n/d	75
2,2-Dichloropropane	μ g/L	n/d	n/d	n/d	
2-Chlorotoluene	μ g/L	n/d	n/d	n/d	
4-Chlorotoluene	μ g/L	<0.5	<0.5	n/d	
Benzene	μ g/L	<0.5	<0.5	n/d	5
Bromobenzene	μ g/L	<0.5	<0.5	n/d	
Bromochloromethane	μ g/L	<0.5	<0.5	n/d	
Bromomethane	μ g/L	<0.5	<0.5	n/d	
Carbon Tetrachloride	μ g/L	<0.5	<0.5	n/d	5
Chlorobenzene	μ g/L	<0.5	<0.5	n/d	100
Chloroethane	μ g/L	<0.5	<0.5	n/d	
Chloromethane	μ g/L	<0.5	<0.5	n/d	
Cis-1,2-Dichloroethene	μ g/L	n/d	n/d	n/d	70
Cis-1,3-Dichloropropene	μ g/L	n/d	n/d	n/d	
Dibromomethane	μ g/L	<0.5	<0.5	n/d	5
Dichlorodifluoromethane	μ g/L	n/d	n/d	n/d	
Dichloromethane	μ g/L	<0.5	<0.5	n/d	5
Ethylbenzene	μ g/L	<0.5	<0.5	n/d	700
Hexachlorobutadiene	μ g/L	n/d	n/d	n/d	
Isopropylbenzene	μ g/L	n/d	n/d	n/d	
n-Butylbenzene	μ g/L	<0.5	<0.5	n/d	
n-Propylbenzene	μ g/L	n/d	n/d	n/d	
Naphthalene	μ g/L	<0.5	<0.5	n/d	
Total Xylenes	μ g/L	<0.5	<0.5	n/d	10000
p-Isopropyltoluene	μ g/L	<0.5	<0.5	n/d	
s-Butylbenzene	μ g/L	<0.5	<0.5	n/d	
Styrene	μ g/L	n/d	n/d	n/d	100
t-Butylbenzene	μ g/L	<0.5	<0.5	n/d	
Tetrachloroethene	μ g/L	n/d	n/d	n/d	5
Toluene	μ g/L	<0.5	<0.5	n/d	1000
Trans-1,2-Dichloroethene	μ g/L	<0.5	<0.5	n/d	100

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PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
VOCs (continued)					
Trans-1,3-Dichloropropene	μ g/L	n/d	n/d	n/d	
Trichloroethene	μ g/L	<0.5	<0.5	n/d	5
Trichlorofluoromethane	μ g/L	<0.5	<0.5	n/d	
Vinyl Chloride	μ g/L	n/d	n/d	n/d	2
Nitrobenzene	μ g/L	n/d	n/d	n/d	
Methyl-tert-butyl ether (MTBE)	μ g/L	<5	<5	<5	
RADIONUCLIDES ⁴					
Gross Alpha	pCi/L	<2	3	<1	15
Gross Beta	pCi/L	<4	6	<3	50
Tritium	pCi/L	<300	<300	<300	

NOTES:

NTU = Nephelometric Turbidity Units (Combined average filter effluent)

° C = Degrees Celcius

mg/L = Milligrams per Liter (equals parts per million)

m g/L = Micrograms per Liter (equals parts per billion)

pg/L = Picograms per Liter (equals parts per quadrillion)

pCi/L = Picocuries per Liter

n/d = Not Detected

¹ The EPA limit will change to 10 μg/L effective January 23, 2006.

² Action level for copper and lead.

³ Total HAA & THM limits based on a running yearly average in the distribution system

⁴ Radionuclides are analyzed by the Maryland Department of Health and Mental Hygiene

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<u>PHYSICAL</u>					
Alkalinity	mg/L	75	92	58	
Color	Units	1	1	0	
Hardness	mg/L	114	135	94	
pH	Units	7.5	7.5	7.5	
Temperature	° C	14.7	27.9	3.2	
Threshold Odor	Units	1.0	1.0	0.4	
Turbidity	NTU	0.05	0.07	0.03	TT
<u>METALS</u>					
Aluminum	μ g/L	63	132	30	
Antimony	μ g/L	<2	<2	n/d	6
Arsenic	μ g/L	n/d	n/d	n/d	50 ¹
Barium	μ g/L	32	36	29	2000
Beryllium	μ g/L	n/d	n/d	n/d	4
Cadmium	μ g/L	n/d	n/d	n/d	5
Calcium	mg/L	33.0	38.8	26.4	
Chromium	μ g/L	2	2	<2	100
Copper	μ g/L	<10	<10	<10	1300 ²
Iron	μ g/L	5	40	n/d	
Lead	μ g/L	n/d	n/d	n/d	15 ²
Magnesium	mg/L	7.2	8.9	5.4	
Manganese	μ g/L	<10	24	<10	
Mercury	μ g/L	n/d	n/d	n/d	2
Nickel	μ g/L	<2	<2	<2	
Potassium	mg/L	2.6	3.4	2.2	
Selenium	μ g/L	<2	<2	<2	50
Silicon	mg/L	3.4	4.0	2.7	
Silver	μ g/L	n/d	n/d	n/d	
Sodium	mg/L	15.5	37.4	9.3	
Thallium	μ g/L	n/d	<1	n/d	2
Zinc	μ g/L	<5	<5	<5	
<u>INORGANICS</u>					
Boron	mg/L	<0.020	0.022	<0.020	
Chloride	mg/L	32.7	72.2	10.8	
Chlorine	mg/L	3.0	3.5	2.7	
Fluoride	mg/L	0.93	1.06	0.60	4
Nitrate as Nitrogen	mg/L	2.17	3.39	1.49	10
Nitrite as Nitrogen	mg/L	n/d	<0.02	n/d	1
Phosphorus	mg/L	0.07	0.15	<0.05	
Sulfate	mg/L	32.7	102	18.1	
<u>BACTERIOLOGICAL (DISTRIBUTION SYSTEM)</u>					
% of Samples Total Coliform Positive (out of 4672 samples)		0.48	2.43	0	5
% of Samples E. coli Positive (out of 4672 samples)		0.11	1.08	0	
Number of E. coli Positive Repeat Samples		0	0	0	0

POTOMAC WATER FILTRATION PLANT TAP WATER ANALYSIS – 2003

PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
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DISINFECTION BYPRODUCTS³ & PRECURSOR

Haloacetic Acids, Total	μ g/L	40.1	56.6	22.3	60 ³
Organic Carbon, Total	mg/L	1.72	2.57	1.34	
Trihalomethanes, Total	μ g/L	46.3	74.9	23.7	80 ³

PESTICIDES & SYNTHETIC ORGANIC CONTAMINANTS (SOC)

2,3,7,8-TCDD (dioxin)	pg/L	n/d	<5	n/d	30
2,4,5 TP (Silvex)	μ g/L	n/d	n/d	n/d	50
2,4-D	μ g/L	n/d	n/d	n/d	70
3-Hydroxycarbofuran	μ g/L	n/d	n/d	n/d	
Alachlor	μ g/L	n/d	n/d	n/d	2
Aldicarb	μ g/L	n/d	n/d	n/d	3
Aldicarb sulfone	μ g/L	n/d	n/d	n/d	2
Aldicarb sulfoxide	μ g/L	n/d	n/d	n/d	4
Aldrin	μ g/L	n/d	n/d	n/d	
Atrazine	μ g/L	n/d	n/d	n/d	3
Benzo(a)pyrene	μ g/L	n/d	n/d	n/d	0.2
Butachlor	μ g/L	n/d	n/d	n/d	
Carbaryl	μ g/L	n/d	n/d	n/d	
Carbofuran	μ g/L	n/d	n/d	n/d	40
Chlorinated biphenyls (PCBs)	μ g/L	n/d	n/d	n/d	0.5
Chlordane	μ g/L	n/d	n/d	n/d	2
Dalapon	μ g/L	n/d	n/d	n/d	200
1,2-Dibromo3-chloropropane(DBCP)	μ g/L	n/d	n/d	n/d	0.2
Di(2-ethylhexyl)adipate	μ g/L	n/d	n/d	n/d	400
Di(2-ethylhexyl)phthalate	μ g/L	1.09	3.60	n/d	6
Dicamba	μ g/L	n/d	n/d	n/d	
Dieldrin	μ g/L	<0.5	<0.5	n/d	
Dinoseb	μ g/L	n/d	n/d	n/d	7
Diquat	μ g/L	n/d	n/d	n/d	20
1,2-Dibromoethane (EDB)	μ g/L	n/d	n/d	n/d	0.05
Endothall	μ g/L	n/d	n/d	n/d	100
Endrin	μ g/L	n/d	n/d	n/d	2
Glyphosate	μ g/L	n/d	n/d	n/d	700
Heptachlor	μ g/L	n/d	n/d	n/d	0.4
Heptachlor Epoxide	μ g/L	n/d	n/d	n/d	0.2
Hexachlorobenzene	μ g/L	n/d	n/d	n/d	1
Hexachlorocyclopentadiene	μ g/L	n/d	n/d	n/d	50
Lindane	μ g/L	n/d	n/d	n/d	0.2
Methomyl	μ g/L	n/d	n/d	n/d	
Methoxychlor	μ g/L	n/d	n/d	n/d	40
Metolachlor	μ g/L	n/d	n/d	n/d	
Metribuzin	μ g/L	n/d	n/d	n/d	
Oxamyl (vydate)	μ g/L	n/d	n/d	n/d	200
Pentachlorophenol	μ g/L	n/d	n/d	n/d	1
Picloram	μ g/L	n/d	n/d	n/d	500
Propachlor	μ g/L	n/d	n/d	n/d	
Simazine	μ g/L	n/d	n/d	n/d	4
Toxaphene	μ g/L	n/d	n/d	n/d	3

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PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
<u>VOLATILE ORGANIC CONTAMINANTS (VOC)</u>					
1,1,1,2-Tetrachloroethane	μ g/L	n/d	n/d	n/d	
1,1,1-Trichloroethane	μ g/L	n/d	n/d	n/d	200
1,1,2,2-Tetrachloroethane	μ g/L	<0.5	<0.5	n/d	
1,1,2-Trichloroethane	μ g/L	<0.5	<0.5	n/d	5
1,1-Dichloroethane	μ g/L	n/d	n/d	n/d	
1,1-Dichloroethene	μ g/L	<0.5	<0.5	n/d	7
1,1-Dichloropropene	μ g/L	n/d	n/d	n/d	
1,2,3-Trichlorobenzene	μ g/L	<0.5	<0.5	n/d	
1,2,3-Trichloropropane	μ g/L	<0.5	<0.5	n/d	
1,2,4-Trichlorobenzene	μ g/L	<0.5	<0.5	n/d	70
1,2,4-Trimethylbenzene	μ g/L	n/d	n/d	n/d	
o-Dichlorobenzene	μ g/L	n/d	n/d	n/d	600
1,2-Dichloroethane	μ g/L	n/d	n/d	n/d	5
1,2-Dichloropropane	μ g/L	n/d	n/d	n/d	5
1,3,5-Trimethylbenzene	μ g/L	n/d	n/d	n/d	
m-Dichlorobenzene	μ g/L	<0.5	<0.5	n/d	
1,3-Dichloropropane	μ g/L	n/d	n/d	n/d	
p-Dichlorobenzene	μ g/L	<0.5	<0.5	n/d	75
2,2-Dichloropropane	μ g/L	n/d	n/d	n/d	
2-Chlorotoluene	μ g/L	n/d	n/d	n/d	
4-Chlorotoluene	μ g/L	n/d	n/d	n/d	
Benzene	μ g/L	<0.5	<0.5	n/d	5
Bromobenzene	μ g/L	n/d	n/d	n/d	
Bromochloromethane	μ g/L	<0.5	<0.5	n/d	
Bromomethane	μ g/L	<0.5	<0.5	n/d	
Carbon Tetrachloride	μ g/L	n/d	n/d	n/d	5
Chlorobenzene	μ g/L	<0.5	<0.5	n/d	100
Chloroethane	μ g/L	<0.5	<0.5	n/d	
Chloromethane	μ g/L	<0.5	<0.5	n/d	
Cis-1,2-Dichloroethene	μ g/L	n/d	n/d	n/d	70
Cis-1,3-Dichloropropene	μ g/L	n/d	n/d	n/d	
Dibromomethane	μ g/L	<0.5	<0.5	n/d	5
Dichlorodifluoromethane	μ g/L	n/d	n/d	n/d	
Dichloromethane	μ g/L	<0.5	0.5	n/d	5
Ethylbenzene	μ g/L	n/d	n/d	n/d	700
Hexachlorobutadiene	μ g/L	<0.5	<0.5	n/d	
Isopropylbenzene	μ g/L	n/d	n/d	n/d	
n-Butylbenzene	μ g/L	<0.5	<0.5	n/d	
n-Propylbenzene	μ g/L	n/d	n/d	n/d	
Naphthalene	μ g/L	<0.5	<0.5	n/d	
Total Xylenes	μ g/L	<0.5	<0.5	n/d	10000
p-Isopropyltoluene	μ g/L	n/d	n/d	n/d	
s-Butylbenzene	μ g/L	n/d	n/d	n/d	
Styrene	μ g/L	n/d	n/d	n/d	100
t-Butylbenzene	μ g/L	n/d	n/d	n/d	
Tetrachloroethene	μ g/L	<0.5	<0.5	n/d	5
Toluene	μ g/L	n/d	n/d	n/d	1000

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PARAMETER	UNIT OF MEASURE	YEARLY AVERAGE	MAXIMUM MONTHLY AVERAGE	MINIMUM MONTHLY AVERAGE	EPA LIMIT
VOCs (continued)					
Trans-1,2-Dichloroethene	μ g/L	n/d	n/d	n/d	100
Trans-1,3-Dichloropropene	μ g/L	<0.5	<0.5	n/d	
Trichloroethene	μ g/L	<0.5	<0.5	n/d	5
Trichlorofluoromethane	μ g/L	<0.5	<0.5	n/d	
Vinyl Chloride	μ g/L	n/d	n/d	n/d	2
Nitrobenzene	μ g/L	n/d	n/d	n/d	
Methyl-tert-butyl ether (MTBE)	μ g/L	<5	<5	n/d	
<u>RADIONUCLIDES</u>⁴					
Gross Alpha	pCi/L	<1	2	<1	15
Gross Beta	pCi/L	<4	5	<3	50
Tritium	pCi/L	<300	<300	<300	

NOTES:

NTU = Nephelometric Turbidity Units (Combined average filter effluent)

° C = Degrees Celcius

mg/L = Milligrams per Liter (equals parts per million)

m g/L = Micrograms per Liter (equals parts per billion)

pg/L = Picograms per Liter (equals parts per quadrillion)

pCi/L = Picocuries per Liter

n/d = Not Detected

¹ The EPA limit will change to 10 μg/L effective January 23, 2006.

² Action level for copper and lead.

³ Total HAA & THM limits based on a running yearly average in the distribution system

⁴ Radionuclides are analyzed by the Maryland Department of Health and Mental Hygiene