

**SUMMARY OF ANN ARBOR DRINKING WATER
CHEMICAL ANALYSES**

Ann Arbor Water Treatment Plant
919 Sunset Road, Ann Arbor, MI 48103

Year Analyzed	Compound	Results	MCL (Maximum Contaminat Level = Regulatory Limit)	MDL (Minimum Detection Level = lowest amount that can be measured)
2002	Algae	3/100 ml		1/100 ml
2002	Alkalinity	38 mg/L as CaCO ₃	----	1 mg/L
2002	Ammonia	0.08 mg/L	----	0.01 mg/L
2002	BDOC (Biological Dissolved Organic Carbon	0.23 mg/L	----	0.2 mg/L
2002	Calcium	37 mg/L	----	1 mg/L
2002	Chloride	90 mg/L	250 mg/L	1 mg/L
2002	Total Chlorine	3.0 mg/L	----	0.1 mg/L
2002	Color	1 units	----	1 unit
2002	Conductivity	453 µS	----	1 µS
2002	Cryptosporidium	ND	2 log removal	1/100 L
2002	Fluoride	1.00 mg/L	4.0 mg/L	0.01 mg/L
2002	Giardia	ND	----	1/100 L
2002	Hardness	131 mg/L	----	1 mg/L
2002	Heterotrophic Plate Count	51 cfu/mL	----	1 cfu/mL
2002	Larsen Index	8.95	----	----
2002	Langelier Index	0.74	----	----
2002	Magnesium	9 mg/L	----	1 mg/L
2002	Nitrate	0.57 mg/L	10 mg/L	0.01 mg/L
2002	Nitrite	15.1 µg/L	1000 µg/L	1 µg/L
2002	Odor	ND	----	1 T.O.N.

1998	Organic Nitrogen	0.3 mg/L	---	0.1 mg/L
2002	pH	9.3	---	0.1
2002	Phosphorus (ortho)	0.09 mg/L	----	0.01 mg/L
2002	Phosphorus (meta)	0.15 mg/L	----	0.01 mg/L
2000	Potassium	3.4 mg/L	----	0.05 mg/L
2001 2000	Radioactivity Gross alpha Gross beta	ND ND	5 pC/L 50 pC/L	1.2 pC/L 2.3 pC/L
2002	Sodium	47.7 mg/L	----	0.1 mg/L
2002	Sulfate	78 mg/L	250 mg/L	1 mg/L
2002	Temperature	13.7 °C	----	0.1 °C
2002	Total solids	332 mg/L	500 mg/L	1 mg/L
2002	Total Organic Carbon	2.3 mg/L	----	0.2 mg/L
2002	Turbidity	0.05 NTU	0.5 NTU	0.01 NTU
2002	Total Coliform (Distribution)	0.89%	<5% positive	1/100 mL
2002	UV254 absorbance	0.050 cm ⁻¹	---	0.009 cm ⁻¹
2000	Enteric Virus	<0.1/100L	4 log removal	0.1/100 L
METALS				
2002	Aluminum	4.6 µg/L	----	2.0 µg/L
2002	Antimony	ND	6 ug/L	2 ug/L
2002	Arsenic	1.5 µg/L	50 ug/L	1.0 ug/L
2002	Barium	12 ug/l	20,000 µg/L	10 ug/l
2002	Beryllium	ND	4 ug/L	1.0 ug/L
2002	Cadmium	ND	5 ug/L	0.2 ug/L
2002	Chromium	ND	100ug/L	1 ug/L
2002	Copper	ND	1.3 mg/L	0.04 mg/L
2002	Iron	ND	0.3 mg/L	0.05mg/L
2002	Lead	ND	15.0 µg/L	10 µg/L

2002	Manganese	1.2 µg/L	50 µg/L	0.2 µg/L
2002	Mercury	ND	2.0 ug/L	0.2 ug/L
2002	Nickel	ND	----	1.0 ug/L
2002	Selenium	ND	50 ug/L	2.0 ug/L
2002	Silver	ND	100 µg/L	0.2 µg/L
2002	Thallium	ND	2.0 ug/L	1.0 ug/L
2002	Zinc	ND	5000 µg/L	20 µg/L
VOLATILE ORGANICS				
2002	Benzene	ND	0.005 mg/L	0.0005 mg/L
2002	Bromobenzene	ND	----	0.0005 mg/L
2002	Bromochloromethane	ND	----	0.0005 mg/L
2002	Bromomethane	ND	----	0.020 mg/L
2002	n-Butylbenzene	ND	----	0.0005 mg/L
2002	Carbon tetrachloride	ND	0.005 mg/L	0.0004 mg/L
2002	Chlorobenzene	ND	0.1 mg/L	0.0005 mg/L
2002	Chloroethane	ND	----	0.020 mg/L
2002	Chloromethane	ND	----	0.05 mg/L
2002	Chlorotoluene (combined)	ND	----	0.0005 mg/L
2002	1,2-Dibromo-3-chloropropane	ND	----	0.2 µg/L
2002	1,2-Dibromoethane (EDB)	ND	----	0.05 µg/L
2002	Dibromomethane	ND	----	0.0005 mg/L
2002	1,2-Dichlorobenzene	ND	0.6 mg/L	.0005mg/L
2002	1,3-Dichlorobenzene	ND	----	.0004mg/L
2002	1,4-Dichlorobenzene	ND	0.075 mg/L	0.0004 mg/L
2001	1,4-Dichlorobutane	ND	----	0.0005 mg/L
2002	1,1-Dichloroethane	ND	----	0.0005 mg/L
2002	1,2-Dichloroethane	ND	0.005 mg/L	0.0005 mg/L

2002	trans-1,2-Dichloroeth(yl)ene	ND	0.1 mg/L	0.0004 mg/L
2002	cis-1,2-Dichloroeth(yl)ene	ND	0.07 mg/L	0.0004 mg/L
2002	1,1-Dichloroeth(yl)ene	ND	0.007 mg/L	0.0005 mg/L
2002	Dichlorodifluoromethane	ND	----	0.001 mg/L
2002	1,2-Dichloropropane	ND	0.005 mg/L	0.0004 mg/L
2002	1,3-Dichloropropane	ND	----	0.001 mg/L
2002	2,2-Dichloropropane	ND	----	0.001 mg/L
2002	cis-1,3-Dichloroprop(yl)ene	ND	----	0.0005 mg/L
2002	trans-1,3-Dichloroprop(yl)ene	ND	----	0.0005 mg/L
2002	1,1-Dichloroprop(yl)ene	ND	----	0.0005 mg/L
2002	1,4-Dioxane	ND	----	0.001 mg/L
2002	Ethylbenzene	ND	0.7 mg/L	0.0005 mg/L
2002	Fluorotrichloromethane	ND	----	0.001 mg/L
2002	Hexachlorobutadiene	ND	----	.0005mg/L
2001	Hexachloroethane	ND	----	.0005mg/L
2002	Isopropyl benzene	ND	----	0.0005 mg/L
2002	p-Isopropyltoluene	ND	----	0.0005 mg/L
2002	Methylene Chloride	ND	0.005 mg/L	0.0006 mg/L
2002	Methyl Isobutyl Ketone (MIBK)	ND	----	0.005 mg/L
2002	Methyl Ethyl Ketone (MEK)	ND	----	0.02 mg/L
2002	Methyl tert-butyl ether	ND	----	0.001 mg/L
2002	Naphthalene	ND	----	1 µg/L
2002	Nitrobenzene	ND	----	0.01 mg/L
2002	n-Propylbenzene	ND	----	0.0005 mg/L
2001	Perchlorate	ND	----	0.004 mg/L
2002	sec-Butylbenzene	ND	----	0.0005 mg/L
2002	Styrene	ND	0.1 mg/L	0.0005 mg/L
2002	tert-butylbenzene	ND	----	0.0005 mg/L
2002	1,1,1,2-Tetrachloroethane	ND	----	0.0005 mg/L

2002	1,1,2,2-Tetrachloroethane	ND	----	0.0005 mg/L
2002	Tetrachloroeth(yl)ene	ND	0.005 mg/L	0.0004 mg/L
2002	Tetrahydrofuran	ND	----	0.005 mg/L
2002	Toluene	ND	1.0 mg/L	0.0005 mg/L
2002	1,2,3-Trichlorobenzene	ND	----	0.0005 mg/L
2002	1,2,4-Trichlorobenzene	ND	0.07 mg/L	0.0005 mg/L
2002	1,1,1-Trichloroethane	ND	0.2 mg/L	0.0004 mg/L
2002	1,1,2-Trichloroethane	ND	0.005 mg/L	0.0005 mg/L
2002	Trichloroeth(yl)ene	ND	0.005 mg/L	0.0004 mg/L
2002	1,2,3-Trichloropropane	ND	----	0.0005 mg/L
2002	1,2,4-Trimethylbenzene	ND	----	0.0005 mg/L
2002	1,3,5-Trimethylbenzene	ND	----	0.0005 mg/L
2002	Vinyl chloride	ND	0.002 mg/L	0.0005 mg/L
2001	1,2-Xylene	ND	10 mg/L	0.0005 mg/L
2002	m&p-Xylene	ND	10 mg/L	0.0005 mg/L
2002	Total Xylenes	ND	10 mg/L	0.0005 mg/L
DISINFECTION BYPRODUCTS				
2002	Formaldehyde	3.8 µg/L	----	2.5 µg/L
2002	m-Glyoxal	1.7 µg/L	----	2.5 ug/l
2002	e-Glyoxal	2.4 µg/L		2.5 ug/l
2002	z- Glyoxal	2.1 µg/L		2.5 ug/l
2002	Total aldehydes	10.9 µg/L		5 ug/l
2002 (distribution)	Chloroform	1.9 µg/L		0.5 µg/L
2002 (distribution)	Chlorodibromomethane	0.8 µg/L		0.5 µg/L
2002 (distribution)	Bromodichloromethane	ND		0.5 µg/L
2002	Bromoform	ND		0.5 µg/L

(distribution)				
2002 (distribution)	Total TTHM Distribution	2.7 ug/l	80 ug/l	0.5 ug/l
2002	Chloroform	1.9 µg/L		0.5 µg/L
2002	Chlorodibromomethane	0.7 µg/L		0.5 µg/L
2002	Bromodichloromethane	ND		0.5 µg/L
2002	Bromoform	ND		0.5 µg/L
2002	Total TTHM Reservoir	4.6 µg/L	80 ug/l	0.5 ug/l
2002 (distribution)	Monochloroacetic acid	ND	----	1.0 µg/L
2002 (distribution)	Monobromoacetic acid	ND	----	1.0 µg/L
2002 (distribution)	Dichloroacetic acid	1.5 µg/L	----	2.0 µg/L
2002 (distribution)	Trichloroacetic acid	1.7 µg/L	----	1.0 µg/L
2002 (distribution)	Bromochloroacetic acid	ND		1.0 µg/L
2002 (distribution)	Dibromoacetic acid	ND	----	1.0 µg/L
2002 (distribution)	Total HAA7 Distribution	3.2 µg/L	60 µg/L	1.0 ug/l
1998	Trichloroacetonitrile	ND	----	0.5 µg/L
1998	Dichloroacetonitrile	ND	----	0.5 µ/l
1998	Bromochloroacetonitrile	ND	----	0.5 µg/L
1998	1,1-Dichloro-2-propanone	0.9 µg/L	----	0.5 µ/l
1998	Chloropicrin	ND	----	0.5 µg/L
1998	Bromochloroacetonitrile	ND		0.5 ug/l
1998	1,1,1-Trichloro-2-propanone	1.2 ug/l	----	0.5 µg/L
1998	Dibromoacetonitrile	0.8 ug/l	----	0.5 µg/L
1998	Total HAN	2.2 µg/L		0.5 ug/l
2002	Bromate	2.9 µg/L	----	0.2 µg/L

1998	Chloral hydrate	ND	----	0.5 µg/l
2003	Chlorate	40 µg/L	----	10 µl
1997	Chlorite	ND	----	20 µg/L
2000	Cyanogen Chloride	2.5 µg/L	----	0.5 µl
1998	TOX	71 µg/L	----	50 µL
ACID EXTRACTABLES				
2003	4-Chloro-3-methylphenol	ND	----	1.0 µg/L
2003	2-Chlorophenol	ND	----	1.0 µg/L
2003	2,4-Dichlorophenol	ND	----	1.0 µg/L
2003	2,4-Dimethylphenol	ND	----	1.0 µg/L
2003	4,6-Dinitro-2-methylphenol	ND	----	1.0 µg/L
2003	2,4-Dinitrophenol	ND	----	1.0 µg/L
2003	2-Methylphenol	ND	----	1.0 µg/L
2003	2-Nitrophenol	ND	----	1.0 µg/L
2003	4-Nitrophenol	ND	----	1.0 µg/L
2003	Phenol	ND	----	1.0 µg/L
2003	2,4,6-Trichlorophenol	ND	----	1.0 µg/L
BASE- NEUTRAL EXTRACTABLES				
2002	Acenaphthene	ND	----	1 µg/L
2002	Acenaphthylene	ND	----	1 µg/L
2002	Anthracene	ND	----	1 µg/L
2002	Benzo[a]anthracene	ND	----	1 µg/L
2002	Benzo[a]pyrene	ND	0.2 µg/L	0.06 µg/L
2002	Benzo[b]fluoranthene	ND	----	1 µg/L
2002	Benzo[k]fluoranthene	ND	----	1 µg/L
2002	Benzo[g,h,i]perylene	ND	----	1 µg/L

2002	Bis(2-ethylhexyl) phthalate	ND	----	1 µg/L
2002	Butylbenzylphthalate	ND	----	1 µg/L
2002	2-Chloronaphthalene	ND	----	1 µg/L
2002	Chrysene	ND	----	1 µg/L
2002	Dibenzo[a,h]anthracene	ND	----	1 µg/L
2002	Di-n-butyl phthalate	ND	----	1 µg/L
2002	Diethylphthalate	ND	----	1 µg/L
2002	Dimethylphthalate	ND	----	1 µg/L
2002	Dimethoxyethyl phthalate	ND	----	1 µg/L
2002	Di(2-ethylhexyl)adipate	ND	400 µg/L	1 µg/L
2001	Di(2-ethylhexyl)phthalate	ND	6 µg/L	1 µg/L
2002	2,4-Dinitrotoluene	ND	----	1 µg/L
2002	2,6-Dinitrotoluene	ND	----	1 µg/L
2002	Di-n-octylphthalate	ND	----	1 µg/L
2002	Fluoranthene	ND	----	1 µg/L
2002	Fluorene	ND	----	1 µg/L
2002	Hexachlorobenzene	ND	1 µg/L	0.1 µg/L
2002	Hexachlorocyclopentadiene	ND	50 µg/L	.2 µg/L
2002	Indeno[1,2,3-cd]pyrene	ND	----	1 µg/L
2002	1-Methylnaphthalene	ND	----	1 µg/L
2002	2-Methylnaphthalene	ND	----	1 µg/L
2002	Phenanthrene	ND	----	0.1 µg/L
2002	Pyrene	ND	----	1 µg/L
PESTICIDES/ HERBICIDES				
2002	Acetochlor	ND	----	1 µg/L
2002	Acifluorfen	ND	----	4 µg/L
	Acrylamide	OK	Treatment	Technique

2002	Alachlor (Lasso)	ND	2 µg/L	0.2 µg/L
2002	Aldicarb	ND	3 µg/L	1.0 µg/L
2002	Aldicarb sulfone	ND	2 µg/L	1.0 µg/L
2002	Aldicarb sulfoxide	ND	4 µg/L	1.0 µg/L
2002	Aldrin	ND	----	0.4 µg/L
1998	alpha-BHC	ND	----	0.05 µg/L
2002	alpha-Chlordane	ND	----	0.2 µg/L
2002	Ametryn	ND	----	1 µg/L
2002	Aroclor 1016	ND	0.5 µg/L	0.2 µg/L
2002	Aroclor 1221	ND	0.5 µg/L	0.2 µg/L
2002	Aroclor 1232	ND	0.5 µg/L	0.2 µg/L
2002	Aroclor 1242	ND	0.5 µg/L	0.2 µg/L
2002	Aroclor 1248	ND	0.5 µg/L	0.2 µg/L
2002	Aroclor 1254	ND	0.5 µg/L	0.2 µg/L
2002	Aroclor 1260	ND	0.5 µg/L	0.2 µg/L
2002	Atrazine	ND	3 µg/L	0.2 µg/L
2002	Bentazon	ND	----	2 µg/L
1999	beta-BHC	ND	----	1 µg/L
2002	Bromacil	ND	----	2 µg/L
2002	Butachlor	ND	----	0.2 µg/L
2002	Butylate	ND	----	2 µg/L
2002	Carbaryl	ND	----	1.0 µg/L
2002	Carbofuran	ND	40 µg/L	1.0 µg/L
2002	Carboxin	ND	----	2 µg/L
2002	Chlorothalonil	ND	----	1 µg/L
2002	Cyanazine	ND	----	1 µg/L
2002	Cycloate	ND	----	2 µg/L
2002	Cyprazine	ND	----	1 µg/L

1999	Cycloate	ND	----	0.1 µg/L
2002	4,4'-DDD	ND	----	1 µg/L
2002	4,4'-DDE	ND	----	1 µg/L
2002	4,4'-DDT	ND	----	1 µg/L
1999	Dacthal	ND	----	1 µg/L
2002	Dalapon	ND	----	1 µg/L
1998	delta-BHC	ND	----	0.05 µg/L
2002	Dicamba	ND	----	2 µg/L
2002	DCPA, mono	ND	----	1 µg/L
2001	DCPA, total	ND	----	1 µg/L
2002	2,4-Dichlorophenoxy acetic acid	ND	70 µg/L	2 µg/L
2002	Dieldrin	ND	----	0.5 µg/L
2002	Dinoseb	ND	70 µg/L	0.3 µg/L
2002	Diphenamid	ND	----	1 µg/L
2002	Diquat	ND	20 µg/L	1 µg/L
2002	alpha-Endosulfan (I)	ND	----	1 µg/L
2002	beta-Endosulfan (II)	ND	----	1 µg/L
1998	Endosulfan sulfate	ND	----	0.1 µg/L
2002	Endothall	ND	100 µg/L	10 µg/L
2002	Endrin	ND	2 µg/L	0.05 µg/L
2002	Endrin aldehyde	ND	----	2 µg/L
	Epichlorohydrin	OK	Treatment	Technique
1999	Eptam	ND	----	1 µg/L
2002	EPTC	ND	----	1 µg/L
2002	gamma-BHC (Lindane)	ND	0.2 µg/L	0.04 µg/L
2002	gamma-Chlordane	ND	----	0.2 µg/L
2002	Heptachlor	ND	0.4 µg/L	0.08 µg/L
2002	Heptachlor epoxide	ND	0.2 µg/L	0.02 µg/L

2000	Hexachlorobenzene	ND	----	0.1 µg/L
2002	Hexachlorocyclohexane	ND	----	1 µg/L
2002	Hexazinone	ND	----	3 µg/L
2002	3-Hydroxycarbofuran	ND	----	1 µg/L
1998	Isodrin	ND	----	0.05 µg/L
1998	Kepone	ND	----	0.10 µg/L
2002	Methiocarb	ND	----	1 µg/L
2002	Methoxychlor	ND	40 µg/L	1 µg/L
2002	Metolachlor (Dual)	ND	----	1 µg/L
2002	Methomyl	ND	----	1 µg/L
2002	Metribuzin (Sencor)	ND	----	1 µg/L
1997	Metsulfuron-methyl	ND	----	0.5 µg/L
2002	Molinate	ND	----	2 µg/L
2002	Octachlorocyclopentene	ND	----	2 µg/L
2002	Oxamyl	ND	200 µg/L	1 µg/L
2003	Pentachlorophenol	ND	1 µg/L	1.0 µg/L
2002	Perchlorate	ND	----	4 µg/L
2001	Polybrominated biphenyls	ND	----	1 µg/L
2002	Picloram (Tordon)	ND	----	2 µg/L
2002	Prometon	ND	----	1 µg/L
2002	Pronamide	ND	----	1 µg/L
2002	Propachlor	ND	----	1 µg/L
2002	Propazine	ND	----	1 µg/L
2002	Propoxur (Baygon)	ND	----	.1 µg/L
2002	Simazine	ND	4 µg/L	0.2 µg/L
2002	2,4,5-T	ND	---	1 µg/L
2002	2,4,5-TP (Silvex)	ND	50 µg/L	0.3 µg/L
2002	Tebuthiuron	ND	----	5 µg/L

2002	Terbacil	ND	----	2 µg/L
2002	Total DCPD, moon & di-acid	ND	----	1 µg/L
2002	Toxaphene	ND	3 µg/L	2 µg/L
2002	Trifluralin	ND	----	1 µg/L

Analyses performed by Ann Arbor Water Treatment Plant, Michigan Department of Public Health, and private labs.

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