

## APPENDIX B

### EPA Methods of Environmental Water Analysis

**Table B-1.** Inorganic constituents of concern in water samples, the analytical methods used to determine their concentrations, and their contractual reporting limits.

Constituent of concern	Analytical method	Reporting limit (a,b)	
<b>Metals and minerals (mg/L)</b>	All alkalinities	SM 2320B or E310.1	1
	Aluminum	EPA 200.7 or 200.8	0.05 or 0.2
	Ammonia nitrogen (as N)	EPA 350.1 or SM 4500-NH3 D	0.03 or 0.1
	Antimony	EPA 200.7 or 200.8	0.1, 0.5 or 0.005
	Arsenic	EPA 200.7 or 200.8	0.05 or 0.002
	Barium	EPA 200.7 or 200.8	0.025 or 0.01
	Beryllium	EPA 200.7, 200.8 or 6010B	0.0005 or 0.0002
	Boron	EPA 200.7 or 6010B	0.05
	Bromide	EPA 300.0	0.5
	Cadmium	EPA 200.7 or 200.8	0.0005
	Calcium	EPA 200.7	0.5
	Chloride	EPA 300.0	0.5
	Chromium	EPA 200.7 or 200.8	0.01 or 0.001
	Chromium(VI)	EPA 218.6 or 7196	0.001 or 0.002
	Cobalt	EPA 200.7, 200.8 or 6010B	0.025, 0.05 or 0.5
	Copper	EPA 200.7, 200.8 or 6010B	0.001, 0.01 or 0.05
	Cyanide	EPA 335.4 or 4500-CN	0.02 or 0.003
	Diesel	8015DRO	50
	Fluoride	EPA 300.0	0.05
	Gas	EPA-8015B	50
	Hardness, total (as CaCO <sub>3</sub> )	SM 2320B, Calc	1
	Iron	EPA 200.7 or 200.8	0.1
	Lead	EPA 200.7 or 200.8	0.002 or 0.005
	Magnesium	EPA 200.7 or 200.8	0.002 or 0.5
	Manganese	EPA 200.7 or 200.8	0.01 or 0.03
	Mercury	EPA 245.2 or 245.1	0.0002
	Molybdenum	EPA 200.7 or 200.8	0.025
	Nickel	EPA 200.7 or 200.8	0.002, 0.005 or 0.1
	Nitrate (as NO <sub>3</sub> )	EPA 353.2, 300.0 or SM 4500-NO3	0.3 or 0.5
	Nitrite (as NO <sub>2</sub> )	EPA 353.2, 300.0 or SM 4500-NO2	0.3 or 0.5
	Salinity	SM2520B	2
	Ortho-phosphate	EPA 300.0, SM 4500-P E or E365.1	0.05
	Perchlorate	EPA 314.0	4
	Potassium	EPA 200.7 or 200.8	1 or 0.5
	Selenium	EPA 200.7, 200.8 or 6010B	0.05 or 0.002
	Silver	EPA 200.7 or 200.8	0.01, 0.001 or 0.0005
	Sodium	EPA 200.7	1 or 0.1
	Sulfate	EPA 300.0	1
	Surfactants	SM 5540C or EPA 425.1	0.5
	Thallium	EPA 200.7 or 200.8	0.1 or 0.001

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Constituent of concern		Analytical method	Reporting limit (a,b)
	Total dissolved solids	EPA 160.1 or SM 2540C	1
	Total suspended solids	EPA 160.2 or SM 2540D	1
	Vanadium	EPA 200.7 or 200.8	0.01, 0.02
	Zinc	EPA 200.7 or 200.8	0.02 or 0.05
<b>General indicator parameters</b>	pH (pH units)	EPA 150.1 or SM 4500HB	1
	Biochemical oxygen demand (mg/L)	SM 5210B	2
	Conductivity (umhos/cm)	EPA 120.1 or SM2510B	none
	Chemical oxygen demand (mg/L)	EPA 410.4 or SM5220D	5 or 20
	Dissolved oxygen (mg/L)	EPA 360.1 or SM 4500-O G	0.05
	Total organic carbon (mg/L)	EPA 9060 or SM 5310C	1
	<b>Radioactivity (Bq/L)</b>	Gross alpha	EPA 900
Gross beta		EPA 900	0.11
<b>Radioisotopes (Bq/L)</b>	Tritium	EPA 906	3.7
	Plutonium 239/240	EM-P558	0.00037

(a) The number of decimal places displayed in this table vary by constituent. These variations reflect regulatory agency permit stipulations, or the applicable analytical laboratory contract under which the work was performed, or both.

(b) These reporting limits are for water samples with low concentrations of dissolved solids. If higher concentrations are present, limits are likely to be higher.

## B. EPA Methods of Environmental Water Analysis

**Table B-2.** Organic constituents of concern in water samples and their contractual reporting limits of concentration, sorted by analytical methods.

Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
<b>EPA Method 1664</b>	
Oil & Grease	5000
<b>EPA Method 547</b>	
Glyphosate	20
<b>EPA Method 608</b>	
Aldrin	0.05
BHC, alpha isomer	0.05
BHC, beta isomer	0.05
BHC, delta isomer	0.05
BHC, gamma isomer (Lindane)	0.05
Chlordane	0.2
Dieldrin	0.1
Endosulfan I	0.05
Endosulfan II	0.1
Endosulfan sulfate	0.1
Endrin	0.1
Endrin aldehyde	0.1
Heptachlor	0.05
Heptachlor epoxide	0.05
Methoxychlor	0.5
4,4'-DDD	0.1
4,4'-DDE	0.1
4,4'-DDT	0.1
Toxaphene	1
PCB 1016	0.2
PCB 1221	0.2
PCB 1232	0.2
PCB 1242	0.2
PCB 1248	0.2
PCB 1254	0.2
PCB 1260	0.2
<b>EPA Method 624</b>	
1,1,1-Trichloroethane	1
1,1,2,2-Tetrachloroethane	1
1,1,2-Trichloroethane	1
1,1-Dichloroethane	1
1,1-Dichloroethene	1
1,2-Dichlorobenzene	1
1,2-Dichloroethane	1
1,2-Dichloroethene (total)	1
1,2-Dichloropropane	1
1,3-Dichlorobenzene	1
1,4-Dichlorobenzene	1

Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
2-Butanone	20
2-Chloroethylvinylether	20
2-Hexanone	20
4-Methyl-2-pentanone	20
Acetone	10
Acrolein	5
Acrylonitrile	5
Benzene	1
Bromodichloromethane	1
Bromoform	1
Bromomethane	2
Carbon disulfide	1
Carbon tetrachloride	1
Chlorobenzene	1
Chloroethane	2
Chloroform	1
Chloromethane	2
cis-1,2-Dichloroethene	1
cis-1,3-Dichloropropene	1
Dibromochloromethane	1
Dibromomethane	1
Dichlorodifluoromethane	2
Ethylbenzene	1
Freon 113	1
Methylene chloride	1
Styrene	1
Tetrachloroethene	1
Toluene	1
Total xylene isomers	2
trans-1,2-Dichloroethene	1
trans-1,3-Dichloropropene	1
Trichloroethene	0.5
Trichlorofluoromethane	1
Vinyl acetate	1
Vinyl chloride	1
<b>EPA Method 625</b>	
1,2,4-Trichlorobenzene	5
1,2-Dichlorobenzene	5
1,3-Dichlorobenzene	5
1,4-Dichlorobenzene	5
2-Butanone	20
2-Chloroethylvinylether	20
2-Hexanone	20

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**Table B-2.** Organic constituents of concern in water samples and their contractual reporting limits of concentration, sorted by analytical methods.

Constituent of concern	Reporting limit (µg/L) (a,b)	Constituent of concern	Reporting limit (µg/L) (a,b)
<b>EPA Method 625 (cont.)</b>		2,4-Dinitrotoluene	5
4-Methyl-2-pentanone	20	2,6-Dinitrotoluene	5
Acetone	10	2-Chloronaphthalene	5
Acrolein	5	2-Chlorophenol	5
Acrylonitrile	5	2-Methylphenol	5
Benzene	1	2-Methyl-4,6-dinitrophenol	25
Bromodichloromethane	1	2-Methylnaphthalene	5
Bromoform	1	2-Nitroaniline	25
Bromomethane	2	3,3'-Dichlorobenzidine	10
Carbon disulfide	1	3-Nitroaniline	25
Carbon tetrachloride	1	4-Bromophenylphenylether	5
Chlorobenzene	1	4-Chloro-3-methylphenol	10
Chloroethane	2	4-Chloroaniline	10
Chloroform	1	4-Chlorophenylphenylether	5
Chloromethane	2	4-Nitroaniline	25
cis-1,2-Dichloroethene	1	4-Nitrophenol	25
cis-1,3-Dichloropropene	1	Acenaphthene	25
Dibromochloromethane	1	Acenaphthylene	5
Dibromomethane	1	Benzo[a]anthracene	5
Dichlorodifluoromethane	2	Benzo[a]pyrene	5
Ethylbenzene	1	Benzo[b]fluoranthene	5
Freon 113	1	Benzo[g,h,i]perylene	5
Methylene chloride	1	Benzo[k]fluoranthene	5
Styrene	1	Benzoic acid	25
Tetrachloroethene	1	Benzyl alcohol	10
Toluene	1	Bis(2-chloroethoxy)methane	5
Total xylene isomers	2	Bis(2-chloroisopropyl)ether	5
trans-1,2-Dichloroethene	1	Bis(2-ethylhexyl)phthalate	5
trans-1,3-Dichloropropene	1	Butylbenzylphthalate	5
Trichloroethene	0.5	Chrysene	5
Trichlorofluoromethane	1	Di-n-butylphthalate	5
Vinyl acetate	1	Di-n-octylphthalate	5
Vinyl chloride	1	Dibenzo[a,h]anthracene	5
<b>EPA Method 625</b>		Dibenzofuran	5
1,2,4-Trichlorobenzene	5	Diethylphthalate	5
1,2-Dichlorobenzene	5	Dimethylphthalate	5
1,3-Dichlorobenzene	5	Fluoranthene	5
1,4-Dichlorobenzene	5	Hexachlorobenzene	5
2,4,5-Trichlorophenol	5	Hexachlorobutadiene	5
2,4,6-Trichlorophenol	5	Hexachlorocyclopentadiene	5
2,4-Dichlorophenol	25	Hexachloroethane	5
2,4-Dimethylphenol	5	Indeno[1,2,3-c,d]pyrene	5

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**Table B-2.** Organic constituents of concern in water samples and their contractual reporting limits of concentration, sorted by analytical methods.

Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>	Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
<b>EPA Method 625 (cont.)</b>		Pentachlorophenol	5
Isophorone	5	Phenanthrene	5
m- and p-Cresol	5	Phenol	5
N-Nitroso-di-n-propylamine	5	Pyrene	5
o-Dichlorobenzene	5	<b>EPA Method 8330</b>	
Naphthalene	5	HMX(c)	5 or 1
Nitrobenzene	5	RDX(d)	5

- (a) The number of decimal places displayed in this table vary by constituent. These variations reflect regulatory agency permit stipulations, the applicable analytical laboratory contract under which the work was performed, or both.
- (b) These reporting limits are for water samples with low concentrations of dissolved solids. If higher concentrations are present, limits are likely to be higher.
- (c) HMX is octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine.
- (d) RDX is hexahydro-1,3,5-trinitro-1,3,5-triazine.

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