

## 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
	Aluminum	EPA 200.7 or 200.8
	Ammonia nitrogen (as N)	EPA 350.1 or SM 4500-NH3 D
	Antimony	EPA 200.7 or 200.8
	Arsenic	EPA 200.7 or 200.8
	Barium	EPA 200.7 or 200.8
	Beryllium	EPA 200.7, 200.8 or 6010B
	Boron	EPA 200.7 or 6010B
	Bromide	EPA 300.0
	Cadmium	EPA 200.7 or 200.8
	Calcium	EPA 200.7
	Chloride	EPA 300.0
	Chromium	EPA 200.7 or 200.8
	Chromium(VI)	EPA 218.6 or 7196
	Cobalt	EPA 200.7, 200.8 or 6010B
	Copper	EPA 200.7, 200.8 or 6010B
	Cyanide	EPA 335.4 or 4500-CN
	Fluoride	EPA 300.0
	Hardness, total (as CaCO <sub>3</sub> )	SM 2320B
	Iron	EPA 200.7 or 200.8
	Lead	EPA 200.7 or 200.8
	Magnesium	EPA 200.7 or 200.8
	Manganese	EPA 200.7 or 200.8
	Mercury	EPA 245.2 or 245.1
	Molybdenum	EPA 200.7 or 200.8
	Nickel	EPA 200.7, 200.8 or SM 3113B
	Nitrate (as NO <sub>3</sub> )	EPA 353.2, 300.0 or SM 4500-NO <sub>3</sub>
	Nitrite (as NO <sub>2</sub> )	EPA 353.2, 300.0 or SM 4500-NO <sub>2</sub>
	Ortho-phosphate	EPA 300.0 or SM 4500-P E
	Perchlorate	EPA 314.0
	Potassium	EPA 200.7 or 200.8
	Selenium	EPA 200.7, 200.8 or 6010B
	Silver	EPA 200.7 or 200.8
	Sodium	EPA 200.7
	Sulfate	EPA 300.0
	Surfactants	SM 5540C or EPA 425.1
	Thallium	EPA 200.7 or 200.8
	Total dissolved solids	EPA 160.1 or SM 2540C
	Total suspended solids	EPA 160.2 or SM 2540D
	Vanadium	EPA 200.7 or 200.8
Zinc	EPA 200.7 or 200.8	

## 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 <sup>(a,b)</sup>
<b>General indicator parameters</b>	pH (pH units)	EPA 150.1 or SM 4500HB	one
	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
Radioactivity (Bq/L)	Gross alpha	EPA 900	0.074
	Gross beta	EPA 900	0.11
Radioisotopes (Bq/L)	Tritium	EPA 906	3.7
	Uranium (calculated total)	ASTM D5174	0.0037

- (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>	Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
<b>EPA Method 1664</b>		Dibromomethane	0.2
Oil & Grease	5000	Dichlorodifluoromethane	0.2
<b>EPA Method 502.2</b>		Ethylbenzene	0.2
1,1,1,2-Tetrachloroethane	0.2	Freon 113	0.2
1,1,1-Trichloroethane	0.2	Hexachlorobutadiene	0.2
1,1,2,2-Tetrachloroethane	0.2	Isopropylbenzene	0.2
1,1,2-Trichloroethane	0.2	<i>m</i> - and <i>p</i> -Xylene isomers	0.2
1,1-Dichloroethane	0.2	Methylene chloride	0.2
1,1-Dichloroethene	0.2	<i>n</i> -Butylbenzene	0.2
1,1-Dichloropropene	0.2	<i>n</i> -Propylbenzene	0.2
1,2,3-Trichlorobenzene	0.2	Naphthalene	0.2
1,2,3-Trichloropropane	0.2	<i>o</i> -Xylene	0.2
1,2,4-Trichlorobenzene	0.2	Isopropyl toluene	0.2
1,2,4-Trimethylbenzene	0.2	<i>sec</i> -Butylbenzene	0.2
1,2-Dichlorobenzene	0.2	Styrene	0.2
1,2-Dichloroethane	0.2	<i>tert</i> -Butylbenzene	0.2
1,2-Dichloropropane	0.2	Tetrachloroethene	0.2
1,3,5-Trimethylbenzene	0.2	Toluene	0.2
1,3-Dichlorobenzene	0.2	<i>trans</i> -1,2-Dichloroethene	0.2
1,3-Dichloropropane	0.2	<i>trans</i> -1,3-Dichloropropene	0.2
1,4-Dichlorobenzene	0.2	Trichloroethene	0.2
2,2-Dichloropropane	0.2	Trichlorofluoromethane	0.2
2-Chlorotoluene	0.2	Vinyl chloride	0.2
4-Chlorotoluene	0.2	<b>EPA Method 507</b>	
Benzene	0.2	Alachlor	0.5
Bromobenzene	0.2	Atraton	0.5
Bromochloromethane	0.2	Atrazine	0.5
Bromodichloromethane	0.2	Bromacil	0.5
Bromoform	0.2	Butachlor	0.5
Bromomethane	0.2	Diazinon	0.5
Carbon tetrachloride	0.2	Dichlorvos	0.5
Chlorobenzene	0.2	Ethoprop	0.5
Chloroethane	0.2	Merphos	0.5
Chloroform	0.2	Metolachlor	0.5
Chloromethane	0.2	Metribuzin	0.5
<i>cis</i> -1,2-Dichloroethene	0.2	Mevinphos	0.5
<i>cis</i> -1,3-Dichloropropene	0.5	Molinate	0.5
Dibromochloromethane	0.2	<u>Prometon</u>	<u>0.5</u>

## 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>	Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
<b>EPA Method 547</b>		Trichloroethene	0.5
Glyphosate	20	Trichlorofluoromethane	0.5
<b>EPA Method 601</b>		Vinyl chloride	0.5
1,1,1-Trichloroethane	0.5	<b>EPA Method 608</b>	
1,1,2,2-Tetrachloroethane	0.5	Aldrin	0.05
1,1,2-Trichloroethane	0.5	BHC, alpha isomer	0.05
1,1-Dichloroethane	0.5	BHC, beta isomer	0.05
1,1-Dichloroethene	0.5	BHC, delta isomer	0.05
1,2-Dichlorobenzene	0.5	BHC, gamma isomer (Lindane)	0.05
1,2-Dichloroethane	0.5	Chlordane	0.2
1,2-Dichloroethene (total)	0.5	Dieldrin	0.1
1,2-Dichloropropane	0.5	Endosulfan I	0.05
1,3-Dichlorobenzene	0.5	Endosulfan II	0.1
1,4-Dichlorobenzene	0.5	Endosulfan sulfate	0.1
2-Chloroethylvinylether	0.5	Endrin	0.1
Bromodichloromethane	0.5	Endrin aldehyde	0.1
Bromoform	0.5	Heptachlor	0.05
Bromomethane	0.5	Heptachlor epoxide	0.05
Carbon tetrachloride	0.5	Methoxychlor	0.5
Chlorobenzene	0.5	4,4'-DDD	0.1
Chloroethane	0.5	4,4'-DDE	0.1
Chloroform	0.5	4,4'-DDT	0.1
Chloromethane	0.5	Toxaphene	1
<i>cis</i> -1,2-Dichloroethene	0.5	<b>EPA Method 624</b>	
<i>cis</i> -1,3-Dichloropropene	0.5	1,1,1-Trichloroethane	1
Dibromochloromethane	0.5	1,1,2,2-Tetrachloroethane	1
Dichlorodifluoromethane	0.5	1,1,2-Trichloroethane	1
Freon-113	0.5	1,1-Dichloroethane	1
Methylene chloride	0.5	1,1-Dichloroethene	1
Tetrachloroethene <i>trans</i> -1,2-	0.5	1,2-Dichlorobenzene	1
Dichloroethene <i>trans</i> -1,3-	0.5	1,2-Dichloroethane	1
Dichloropropene	0.5		

## 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>	Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
<b>EPA Method 624 (cont.)</b>		<b>EPA Method 625</b>	
1,2-Dichloroethene (total)	1	1,2,4-Trichlorobenzene	5
1,2-Dichloropropane	1	1,2-Dichlorobenzene	5
1,3-Dichlorobenzene	1	1,3-Dichlorobenzene	5
1,4-Dichlorobenzene	1	1,4-Dichlorobenzene	5
2-Butanone	20	2,4,5-Trichlorophenol	5
2-Chloroethylvinylether	20	2,4,6-Trichlorophenol	5
2-Hexanone	20	2,4-Dichlorophenol	5
4-Methyl-2-pentanone	20	2,4-Dimethylphenol	5
Acetone	10	2,4-Dinitrophenol	25
Benzene	1	2,4-Dinitrotoluene	5
Bromodichloromethane	1	2,6-Dinitrotoluene	5
Bromoform	1	2-Chloronaphthalene	5
Bromomethane	2	2-Chlorophenol	5
Carbon disulfide	1	2-Methylphenol	5
Carbon tetrachloride	1	2-Methyl-4,6-dinitrophenol	25
Chlorobenzene	1	2-Methylnaphthalene	5
Chloroethane	2	2-Nitroaniline	25
Chloroform	1	3,3'-Dichlorobenzidine	10
Chloromethane	2	3-Nitroaniline	25
<i>cis</i> -1,2-Dichloroethene	1	4-Bromophenylphenylether	5
<i>cis</i> -1,3-Dichloropropene	1	4-Chloro-3-methylphenol	10
Dibromochloromethane	1	4-Chloroaniline	10
Dibromomethane	1	4-Chlorophenylphenylether	5
Dichlorodifluoromethane	2	4-Nitroaniline	25
Ethylbenzene	1	4-Nitrophenol	25
Freon 113	1	Acenaphthene	25
Methylene chloride	1	Acenaphthylene	5
Styrene	1	Anthracene	5
Tetrachloroethene	1	Benzo[a]anthracene	5
Toluene	1	Benzo[a]pyrene	5
Total xylene isomers	2	Benzo[b]fluoranthene	5
<i>trans</i> -1,2-Dichloroethene	1	Benzo[ <i>g,h,i</i> ]perylene	5
<i>trans</i> -1,3-Dichloropropene	1	Benzo[ <i>k</i> ]fluoranthene	5
Trichloroethene	0.5	Benzoic acid	25
Trichlorofluoromethane	1	Benzyl alcohol	10
Vinyl acetate	1	Bis(2-chloroethoxy)methane	5
Vinyl chloride	1	Bis(2-chloroisopropyl)ether	5

## 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) (a,b)	Constituent of concern	Reporting limit (µg/L) (a,b)
<b>EPA Method 625 (cont.)</b>		1,1-Dichloroethene	0.5
Bis(2-ethylhexyl)phthalate	5	1,2,3-Trichloropropane	0.5
Butylbenzylphthalate	5	1,2-Dibromo-3-chloropropane	0.5
Chrysene	5	1,2-Dichloroethane	0.5
Di- <i>n</i> -butylphthalate	5	1,2-Dichloroethene (total)	0.5
Di- <i>n</i> -octylphthalate	5	1,2-Dichloropropane	0.5
Dibenzo[ <i>a,h</i> ]anthracene	5	2-Butanone	0.5
Dibenzofuran	5	2-Chloroethylvinylether	0.5
Diethylphthalate	5	2-Hexanone	0.5
Dimethylphthalate	5	4-Methyl-2-pentanone	0.5
Fluoranthene	5	Acetone	10
Fluorene	5	Acetonitrile	100
Hexachlorobenzene	5	Acrolein	50
Hexachlorobutadiene	5	Acrylonitrile	50
Hexachlorocyclopentadiene	5	Benzene	0.5
Hexachloroethane	5	Bromodichloromethane	0.5
Indeno[1,2,3- <i>c,d</i> ]pyrene	5	Bromoform	0.5
Isophorone	5	Bromomethane	0.5
<i>m</i> - and <i>p</i> -Cresol	5	Carbon disulfide	5
<i>N</i> -Nitroso-di- <i>n</i> -propylamine	5	Carbon tetrachloride	0.5
Naphthalene	5	Chlorobenzene	0.5
Nitrobenzene	5	Chloroethane	0.5
Pentachlorophenol	5	Chloroform	0.5
Phenanthrene	5	Chloromethane	0.5
Phenol	5	Chloroprene	5
Pyrene	5	Dibromochloromethane	0.5
<b>EPA Method 632</b>		Dichlorodifluoromethane	0.5
Diuron	0.1	Ethanol	1000
<b>EPA Method 8260</b>		Ethylbenzene	0.5
1,1,1,2-Tetrachloroethane	0.5	Freon-113	0.5
1,1,1-Trichloroethane	0.5	Methylene chloride	0.5
1,1,2,2-Tetrachloroethane	0.5	Styrene	0.5
1,1,2-Trichloroethane	0.5	Tetrachloroethene	0.5
1,1-Dichloroethane	0.5	Toluene	0.5

## 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>	Constituent of concern	Reporting limit (µg/L) <sup>(a,b)</sup>
<b>EPA Method 8260 (cont.)</b>		<i>cis</i> -1,3-Dichloropropene	0.5
Total xylene isomers	0.5	<i>trans</i> -1,2-Dichloroethene	0.5
Trichloroethene	0.5	<i>trans</i> -1,3-Dichloropropene	0.5
Trichlorofluoromethane	0.5	<b>EPA Method 8330B</b>	
Vinyl acetate	20	HMX <sup>(c)</sup>	5 or 1
Vinyl chloride	0.5	RDX <sup>(d)</sup>	5
<i>cis</i> -1,2-Dichloroethene	0.5		

- (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.

This page is intentionally left blank.