

Methods and Analytes Requiring Laboratory Certification

Attachment 3 Current as of July 1, 2011

Laboratory Certificates need to accurately reflect the methods performed and reported by the laboratory, including the version designation.

Clean Water Program

All methods identified as approved in 40 CFR 136.3 will be accepted by the Minnesota Pollution Control Agency (MPCA) for the following parameters:

Bacteria

Coliform- fecal

Coliform - fecal with chlorine present

Coliform- total

Coliform- total with chlorine present

Escherichia coli Fecal streptococci

Inorganic

Acidity, as CaCO3 Fluoride Residue-total

Alkalinity as CaCO3 Hardness- Total as CaCO3 Residue-filterable (TDS)

Ammonia as N Kjeldahl Nitrogen –Total Residue-non-filterable (TSS)

Biochemical oxygen demand

Bromide

Nitrate as N

Nitrate as N

Residue-settleable

Residue-volatile

Residue-volatile

Residue-volatile

Silica-dissolved

Chemical oxygen demand

Oil & Grease

Specific conductance

ChlorideOrganic Carbon- TotalSulfateChromium VIOrganic nitrogenSulfideColorOrthophosphate as PSulfite-SO3Cyanide- TotalPhenolsSurfactantsCyanide- AvailablePhosphorus- TotalTurbidity

Metals

Aluminum Cobalt Potassium Copper Selenium Antimony Silica-dissolved Arsenic Iron Silver **Barium** Lead Beryllium Magnesium Sodium Thallium Boron Manganese Cadmium Mercury Tin

Calcium Molybdenum Vanadium
Chromium- Total Nickel Zinc

p-eao2-09c January 2012

Organics, Semi-volatile

Naphthalene Acenaphthene 3,3'-Dichlorobenzidine Acenaphthylene 2.4-Dichlorophenol Nitrobenzene Anthracene Diethyl phthalate 2-Nitrophenol Benzidine 2,4-Dimethylphenol 4-Nitrophenol

Dimethyl phthalate n-Nitrosodimethylamine Benzo(a)anthracene n-Nitrosodi-n-propylamine Benzo(a)pyrene Di-n-butyl phthalate Benzo[b]fluoranthene Di-n-octyl phthalate n-Nitrosodiphenylamine 2,4-Dinitrophenol (typo in 136.3 as 2,3-Benzo(g,h,i)perylene bis(2-Chloroisopropyl) ether Dinitrophenol) Benzo(k)fluoranthene Pentachlorophenol

2,4-Dinitrotoluene (2,4-DNT) Benzyl butyl phthalate Phenanthrene 2,6-Dinitrotoluene (2,6-DNT) bis(2-Chloroethoxy)methane Phenol Fluoranthene bis(2-Chloroethyl) ether Pyrene

Fluorene bis(2-Ethylhexyl)phthalate (Di(2-1,2,4-Trichlorobenzene ethylhexyl) phthalate) Hexachlorobenzene 2.4.6-Trichlorophenol

4-Bromophenyl phenyl ether Hexachlorobutadiene Aroclor-1016 (PCB-1016) Hexachlorocyclopentadiene 4-Chloro-3-methylphenol Aroclor-1221 (PCB-1221) 2-Chloronaphthalene Hexachloroethane Aroclor-1232 (PCB-1232) 2-Chlorophenol Indeno(1,2,3-cd) pyrene Aroclor-1242 (PCB-1242) 4-Chlorophenyl phenylether Isophorone Aroclor-1248 (PCB-1248)

2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-Chrysene Aroclor-1254 (PCB-1254) methylphenol) Dibenzo(a,h) anthracene Aroclor-1260 (PCB-1260)

Organics, Volatile

*Acrolein (Propenal) Chloromethane (Methyl chloride) trans-1,3-Dichloropropene *Acrylonitrile Dibromochloromethane Ethylbenzene Benzene 1.2-Dichlorobenzene Methylene chloride

Bromodichloromethane 1,3-Dichlorobenzene 1,1,2,2-Tetrachloroethane

Bromoform 1,4-Dichlorobenzene Tetrachloroethene (Perchloroethylene)

Bromomethane (Methyl bromide) 1,1-Dichloroethane Toluene Carbon tetrachloride 1.2-Dichloroethane 1,1,1-Trichloroethane 1,1-Dichloroethene 1,1,2-Trichloroethane Chlorobenzene

Chloroethane (Ethyl chloride) trans-1,2-Dichloroethene Trichloroethene 2-Chloroethyl vinyl ether 1.2-Dichloropropane Trichlorofluoromethane

Chloroform cis-1,3-Dichloropropene Vinyl chloride

Organics, Dioxins and Furans

1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)

1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)

1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)

1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)

1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)

2,3,4,6,7,8-Hexachlorodibenzofuran

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)

1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)



^{*} These compounds can be screened by 624. If known to be present, they should be analyzed by 603 or 1624B.

Organics, Dioxins and Furans (continued)

1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)

1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)

2,3,4,7,8-Pentachlorodibenzofuran

1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)

2,3,7,8-Tetrachlorodibenzofuran

2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)

Total HpCDD

Total HpCDF

Total HxCDD

Total HxCDF

Total PeCDD

Total PeCDF

Total TCDD

Total TCDF

Organics, Pesticides

Aldrin alpha-BHC (alpha-Hexachlorocyclohexane) beta-BHC (beta-Hexachlorocyclohexane)

delta-BHC

gamma-BHC (Lindane)

Chlordane (tech.) 4,4'-DDD

4,4'-DDE

4,4 -DDL

4.4'-DDT

Dieldrin

Endosulfan I Endosulfan II Endosulfan sulfate

Endrin

Endrin aldehyde Heptachlor

Heptachlor epoxide

Toxaphene (Chlorinated camphene)

Analyses of dissolved oxygen, pH, temperature and total residual oxidants (chlorine, bromine) do **not** need to be completed by a certified laboratory but shall comply with manufacturer's specifications for equipment calibration and use.

Analytes and methods available for certification but not on this MPCA list do not require certification by the MPCA at this time. This list will be reviewed yearly and any changes will be made by July 1 of each year. A laboratory that wishes to perform analyses of the newly added compounds or methods for National Pollutant Discharge Elimination System (NPDES) permits or data that could potentially be submitted to the MPCA, will need to make these additions to their certification effective the following January 1.

There may be analytes available for certification by the multi-analyte methods that are not listed as part of the reference method and not specifically listed as EPA 136.3 parameters for that particular method. An example of this is 1,2,4-trichlorobenzene by method 624. The compound 1,2,4-trichlorobenzene is not listed as an analyte in method 624 and EPA 136.3 does not list 624 as an appropriate method for this analyte, although it may be possible to analyze 1,2,4-trichlorobenzene by method 624. The MPCA, therefore, does not require labs to be certified for 1,2,4-trichlorobenzene by method 624.

Whole Effluent Toxicity is reviewed by the MPCA due to technical requirements or specialties that are found within the MPCA and therefore does not require laboratory certification.

Resource Conservation and Recovery Act (RCRA)

All methods identified as final in the SW-846 Methods Status Table will be accepted by the MPCA. Laboratories must be Certified for the individual analytes and matrix categories by the methods they are performing. See the MPCA Laboratory Quality Control (QC) and Data Policy for requirements on demonstrating appropriate performance at the concentration of interest.

Method	Analyte	
6010 6010C required as of January 1, 2012	Applicable for all elements and matrices if appropriate performance at the concentration of interest is demonstrated.	
6020 6020A required as of January 1, 2012	Applicable for all elements and matrices if appropriate performance at the concentration of interest is demonstrated.	
7196A	Chromium VI	
7470A	Mercury	
7471A 7471B required as of January 1, 2012	Mercury	
7473	Mercury	
8021B	Applicable for aromatic and halogenated volatile compounds in a variety of matrices. Appropriate performance at the concentration of interest must be demonstrated.	
8081A 8081B required as of January 1, 2012	Applicable for organochlorine pesticides. Appropriate performance at the concentration of interest must be demonstrated.	
8082 8082A required as of January 1, 2012	Applicable for the determination of polychlorinated biphenyls (PCBs). Currently MPCA regulations assume PCBs are calculated as Aroclors.	
8260 B	The following list of compounds defines the default analytes the MPCA wants to see for this analysis if no specific list is requested:	
	Benzene	
	Bromobenzene	
	Bromochloromethane	
	Bromodichloromethane	
	Bromoform Bromomethane (Methyl bromide)	
	n-Butylbenzene	
	sec-Butylbenzene	
	tert-Butylbenzene	
	Carbon tetrachloride	
	Chlorobenzene	
	Chloroethane (Ethyl chloride)	
	Chloroform	
	Chloromethane (Methyl chloride) Dibromochloromethane	
	1,2-Dibromo-3-chloropropane (DBCP)	
	1,2-Dibromoethane (EDB)	
	Dibromomethane	
	1,2-Dichlorobenzene	
	1,3-Dichlorobenzene	
	1,4-Dichlorobenzene	

The following list of compounds defines the default analytes the MPCA wants to see for this analysis if no specific list is requested (8260B continued from previous page):

Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,1-Dichloropropene 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene 2-Chlorotoluene 4-Chlorotoluene Ethylbenzene Hexachlorobutadiene

Isopropylbenzene
4-Isopropyltoluene
Methylene chloride (Dichloromethane)

Naphthlene n-Propylbenzene

Styrene

1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane

Tetrachloroethene (Perchloroethylene)

Toluene

1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,2,3,-Trichloropropane

Trichloroethene

Trichlorofluoromethane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene

m+p-xylene o-xylene Vinyl chloride

2-Butanone (Methyl ethyl ketone, MEK)

4-Methyl-2-pentanone (MIBK)

Acetone Allyl chloride Diethyl ether

Methyl tert-butyl ether (MTBE) *Tetrahydrofuran (THF)

*1,1,2-trichhloro-1,2,2-trifluoroethane (Freon 113)

*Dichlorofluoromethane

Butyl benzyl phthalate

*The MPCA recognizes these three compounds are not currently available for Certification by the Minnesota Department of Health (MDH) at this time for Method 8260B.

Other compounds may be required on a project specific basis. As long as a laboratory has Certification for this method and the base analytes listed above, the MPCA will not require labs to be certified for additional analytes requested on a project specific basis, unless required by a program, permit or Quality Assurance Project Plan (QAPP), as long as the laboratory maintains records demonstrating proficiency in the analysis of the additional analyte(s). See the MPCA Laboratory QC and Data Policy for requirements.

Method	Analyte
8270C	The following list of compounds defines the default analytes the
8270D required as of January 1, 2012	MPCA wants to see for analysis if no specific list is requested:
	Acenaphthene
	Acenaphthylene
	Aniline
	Anthracene
	Benzidine
	Benzo(a)anthracene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Benzo(a)pyrene
	Benzo(g,h,i)perylene
	Benzoic acid
	Benzyl alcohol

The following list of compounds defines the default analytes the MPCA wants to see for analysis if no specific list is requested (8270 C or D continued from previous page):

bis(2-Chloroethoxy)methane Hexachlorobenzene bis(2-Chloroethyl) ether Hexachlorobutadiene bis(2-Chloroisopropyl) ether Hexachlorocyclopentadiene bis(2-Ethylhexyl)phthalate Hexachloroethane 4-Bromophenyl phenyl ether Indeno(1,2,3-cd) pyrene *Carbazole Isophorone 4-Chloro-3-methylphenol 2-Methyl-4,6-dinitrophenol 2-Chloronaphthalene 2-Methylnaphthalene 2-Chlorophenol 2-Methylphenol (o-Cresol) 4-Methylphenol (p-Cresol) 4-Chlorophenyl phenylether Naphthalene Chrysene Dibenzo(a,h) anthracene 2-Nitroaniline Dibenzofuran 3-Nitroaniline Di-n-butyl phthalate 4-Nitroaniline 1,2-Dichlorobenzene Nitrobenzene 1,3-Dichlorobenzene 2-Nitrophenol 1,4-Dichlorobenzene 4-Nitrophenol 3,3'-Dichlorobenzidine n-Nitrosodi-n-propylamine 2,4-Dichlorophenol n-Nitrosodimethylamine 2,6-Dichlorophenol n-Nitrosodiphenylamine Diethyl phthalate Phenanthrene 2,4-Dimethylphenol Pentachlorophenol Dimethyl phthalate Phenol 2,4-Dinitrophenol Pyrene 2,4-Dinitrotoluene (2,4-DNT) Pyridine 2,6-Dinitrotoluene (2,6-DNT) 2,3,4,6-Tetrachlorophenol Di-n-octyl phthalate 1,2,4-Trichlorobenzene 1,2-Diphenylhydrazine (analyzed as Azobenzene) 2,4,5-Trichlorophenol Fluoranthene 2,4,6-Trichlorophenol Fluorene

Other compounds may be required on a project specific basis. As long as a laboratory has Certification for this method and the base analytes listed above, the MPCA will not require labs to be certified for additional analytes requested on a project specific basis, unless required by a program, permit or QAPP, as long as the laboratory maintains records demonstrating proficiency in the analysis of the additional analyte(s). See the MPCA Laboratory QC and Data Policy for requirements.

Method	Analyte	
8270C SIM	The following list of compounds defines the default analytes the MPCA wants to see for this analysis if no specific list is requested:	
8270D SIM required as of January 1, 2012		
	Benzo(a)anthracene	*Acenaphthene
	Benzo(a)pyrene	*Acenaphthylene
	Benzo(b)fluoranthene	*Anthracene
	Benzo(k)fluoranthene	*Benzo(g,h,i)perylene
	Dibenz(a,h) anthracene	*Chrysene
	Fluoranthene	*Fluorene
	Indeno(1,2,3-cd) pyrene	*Naphthalene
	Pyrene	*Phenathrene
	3	these compounds are not presently on by SW-846 Method 8270C SIM.



^{*}The MPCA recognizes that this compound is not currently available for MDH Certification by SW-846 Method 8270C.

Method	Analyte
9012B	Cyanide
9045D	рН
9056A	Bromide Chloride Fluoride Nitrate Sulfate Phosphate
Underground Storage Tank Program	
TO-15	See MPCA Petroleum Remediation Guidance Document 4-01a for the current list of analytes and requirements.
WI(95) DRO	Diesel range organics (DRO)
WI(95) GRO	Gasoline range organics (GRO) Petroleum Volatile Organic Compounds (PVOC)
Other	

The following methods have been deleted in the SW-846 Method Status Table and are no longer recognized by the MPCA as valid for work reported to the Agency:

PCBs

Method	Analyte
7060A	Arsenic
7130	Cadmium
7190	Chromium
7210	Copper
7420	Lead
7481	Molybdenum
7520	Nickel
7610	Potassium
7740	Selenium
7760A	Silver
7950	Zinc



EPA 600/4-81-045