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21-003

September, 2024

Guidance for Conducting Reapplication Sampling for Facilities Discharging Process Wastewater

(Formerly Known as Process Wastewater Pollutant Scan)

Except for stormwater discharges, all manufacturing, commercial, mining and silvicultural dischargers applying for NPDES permits which discharge process wastewater shall provide the information in Section A through C to the Department once per permit term.

A. General Required Sampling and Analysis

Every applicant must report quantitative data for every outfall directly discharging process wastewater for the following pollutants:

1. Biochemical Oxygen Demand (BOD₅)
2. Chemical Oxygen Demand
3. Total Organic Carbon
4. Total Suspended Solids
5. Ammonia (as N)
6. Temperature (both winter and summer)
7. pH

The Director may waive the reporting requirements for individual point sources or for a particular industry category for one or more of the pollutants listed above in Section A if the applicant has demonstrated that such a waiver is appropriate because information adequate to support issuance of a permit can be obtained with less stringent requirements.

B. Sampling and Analysis for Pollutants Expected to Be Present

1. Each applicant must indicate whether it knows or has reason to believe that any of the pollutants in Table IV (certain conventional and nonconventional pollutants) is discharged from each outfall. If an applicable effluent limitations guideline either directly limits the pollutant or, by its express terms, indirectly limits the pollutant through limitations on an indicator, the applicant must report quantitative data. For every pollutant discharged which is not so limited in an effluent limitations guideline, the applicant must either report quantitative data or briefly describe the reasons the pollutant is expected to be discharged.
2. Each applicant must indicate whether it knows or has reason to believe that any of the pollutants listed in Table II or Table III (the toxic pollutants and total phenols) for which quantitative data are not otherwise required under Section C are discharged from each outfall. For every pollutant expected to be discharged in concentrations of 10 ppb or greater the applicant must report quantitative data. For acrolein, acrylonitrile, 2,4 dinitrophenol, and 2-methyl-4, 6 dinitrophenol, where any of these four pollutants are expected to be discharged in concentrations of 100 ppb or greater the applicant must report quantitative data. For every pollutant expected to be discharged in concentrations less than 10 ppb, or in the case of acrolein, acrylonitrile, 2,4 dinitrophenol, and 2-methyl-4, 6 dinitrophenol, in concentrations less than 100 ppb, the applicant must either submit quantitative data or briefly describe the reasons the pollutant is

expected to be discharged. An applicant qualifying as a small business under paragraph (g)(8) of 40 CFR 122.21 is not required to analyze for pollutants listed in Table III (the organic toxic pollutants).

3. Each applicant must indicate whether it knows or has reason to believe that any of the pollutants in Table V (certain hazardous substances and asbestos) are discharged from each outfall. For every pollutant expected to be discharged, the applicant must briefly describe the reasons the pollutant is expected to be discharged, and report any quantitative data it has for any pollutant.
4. Each applicant must report qualitative data, generated using a screening procedure not calibrated with analytical standards, for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) if it:
 - a. Uses or manufactures 2,4,5-trichlorophenoxy acetic acid (2,4,5,-T); 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5,-TP); 2-(2,4,5-trichlorophenoxy) ethyl, 2,2-dichloropropionate (Erbon); O,O-dimethyl O-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel); 2,4,5-trichlorophenol (TCP); or hexachlorophene (HCP); or
 - b. Knows or has reason to believe that TCDD is or may be present in an effluent.

C. Industry Specific Sampling and Analysis

Each applicant with processes in one or more primary industry category (see Section D) contributing to a discharge must report quantitative data for the following pollutants in each outfall containing process wastewater:

1. The organic toxic pollutants in the fractions designated in Table I and Section E for the applicant's industrial category or categories unless the applicant qualifies as a small business under paragraph (g)(8) of 40 CFR 122.21. Table III lists the organic toxic pollutants in each fraction. The fractions result from the sample preparation required by the analytical procedure which uses gas chromatography/mass spectrometry. A determination that an applicant falls within a particular industrial category for the purposes of selecting fractions for testing is not conclusive as to the applicant's inclusion in that category for any other purposes.
2. The pollutants listed in Table II (the toxic metals, cyanide, and total phenols).

D. Applicable Primary Industry Categories

Adhesives and sealants	Ore mining
Aluminum forming	Organic chemicals manufacturing
Aluminum forming	Paint and ink formulation
Auto and other laundries	Pesticides
Battery manufacturing	Petroleum refining
Coal mining	Pharmaceutical preparations
Coil coating	Photographic equipment and supplies
Copper forming	Plastics processing
Electrical and electronic components	Plastic and synthetic materials manufacturing
Electroplating	Porcelain enameling
Explosives manufacturing	Printing and publishing
Foundries	Pulp and paper mills
Gum and wood chemicals	Rubber processing
Inorganic chemicals manufacturing	Soap and detergent manufacturing
Iron and steel manufacturing	Steam electric power plants
Leather tanning and finishing	Textile mills
Mechanical products manufacturing	Timber products processing
Nonferrous metals manufacturing	

Table I – Testing Requirements for Organic Toxic Pollutants by Industrial Category for Existing Dischargers

Industrial category	GC/MS Fraction ¹			
	Volatile	Acid	Base/neutral	Pesticide
Adhesives and Sealants	2	2	2	
Aluminum Forming	2	2	2	
Auto and Other Laundries	2	2	2	2
Battery Manufacturing	2		2	
Coal Mining	2	2	2	2
Coil Coating	2	2	2	
Copper Forming	2	2	2	
Electric and Electronic Components	2	2	2	2
Electroplating	2	2	2	
Explosives Manufacturing		2	2	
Foundries	2	2	2	
Gum and Wood Chemicals	2	2	2	2
Inorganic Chemicals Manufacturing	2	2	2	
Iron and Steel Manufacturing	2	2	2	
Leather Tanning and Finishing	2	2	2	2
Mechanical Products Manufacturing	2	2	2	
Nonferrous Metals Manufacturing	2	2	2	2
Ore Mining	2	2	2	2
Organic Chemicals Manufacturing	2	2	2	2
Paint and Ink Formulation	2	2	2	2
Pesticides	2	2	2	2
Petroleum Refining	2	2	2	2
Pharmaceutical Preparations	2	2	2	
Photographic Equipment and Supplies	2	2	2	2
Plastic and Synthetic Materials Manufacturing	2	2	2	2
Plastic Processing	2			
Porcelain Enameling	2		2	2
Printing and Publishing	2	2	2	2
Pulp and Paper Mills	2	2	2	2
Rubber Processing	2	2	2	
Soap and Detergent Manufacturing	2	2	2	
Steam Electric Power Plants	2	2	2	
Textile Mills	2	2	2	2
Timber Products Processing	2	2	2	2

¹The toxic pollutants in each fraction are listed in Table II.

²Testing required.

Table II – Other Toxic Pollutants (Metals, Cyanide) and Total Phenols

Other Toxic Metals, Cyanide, and Total Phenols		
Antimony, Total	Copper, Total	Silver, Total
Arsenic, Total	Lead, Total	Thallium, Total
Beryllium, Total	Mercury, Total	Zinc, Total
Cadmium, Total	Nickel, Total	Cyanide, Total
Chromium, Total	Selenium, Total	Phenols, Total

Table III – Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS)

Volatiles		
Acrolein	Chloroform	Methylene chloride
Acrylonitrile	Dichlorobromomethane	1,1,2,2-tetrachloroethane
Benzene	1,1-dichloroethane	Tetrachloroethylene
Bromoform	1,2-dichloroethane	Toluene
Carbon tetrachloride	1,1-dichloroethylene	1,2-trans-dichloroethylene
Carbon tetrachloride	1,2-dichloropropane	1,1,1-trichloroethane
Chlorobenzene	1,3-dichloropropylene	1,1,2-trichloroethane
Chlorodibromomethane	Ethylbenzene	Trichloroethylene
Chloroethane	Methyl bromide	Vinyl chloride
2-chloroethylvinyl ether	Methyl chloride	
Acid Compounds		
2-chlorophenol	2,4-dinitrophenol	Pentachlorophenol
2,4-dichlorophenol	2-nitrophenol	Phenol
2,4-dimethylphenol	4-nitrophenol	2,4,6-trichlorophenol
4,6-dinitro-o-cresol	p-chloro-m-cresol	
Base/Neutral		
Acenaphthene	4-chlorophenyl phenyl ether	Fluorene
Acenaphthylene	Chrysene	Hexachlorobenzene
Anthracene	Dibenzo(a,h)anthracene	Hexachlorobutadiene
Benidine	1,2-dichlorobenzene	Hexachlorocyclopentadiene
Benzo(a)anthracene	1,3-dichlorobenzene	Hexachloroethane
Benzo(a)pyrene	1,4-dichlorobenzene	Indeno(1,2,3-cd)pyrene
3,4-benzofluoranthene	3,3'-dichlorobenzidine	Isophorone
Benzo(ghi)perylene	Diethyl phthalate	Napthalene
Benzo(k)fluoranthene	Dimethyl phthalate	Nitrobenzene
Bis(2-chloroethoxy)methane	Di-n-butyl phthalate	N-nitrosodimethylamine
Bis(2-chloroethyl)ether	2,4-dinitrotoluene	N-nitrosodi-n-propylamine
Bis(2-chloroisopropyl)ether	2,6-dinitrotoluene	N-nitrosodiphenylamine
Bis (2-ethylhexyl)phthalate	Di-n-octyl phthalate	Phenanthrene
4-bromophenyl phenyl ether	1,2-diphenylhydrazine (as azobenzene)	Pyrene
Butylbenzyl phthalate		1,2,4-trichlorobenzene
2-chloronaphthalene	Fluoranthene	

Table III Continued – Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS)

Pesticides		
Aldrin	Dieldrin	PCB-1254
Alpha-BHC	Alpha-endosulfan	PCB-1221
Beta-BHC	Beta-endosulfan	PCB-1232
Gamma-BHC	Endosulfan sulfate	PCB-1248
Delta-BHC	Endrin	PCB-1260
Chlordane	Endrin aldehyde	PCB-1016
4,4'-DDT	Heptachlor	Toxaphene
4,4'-DDE	Heptachlor epoxide	
4,4'-DDD	PCB-1242	

Table IV – Conventional and Nonconventional Pollutants Required to Be Tested by Existing Dischargers if Expected to be Present

Bromide	Phosphorus, Total	Boron, Total
Chlorine, Total Residual	Radioactivity	Cobalt, Total
Color	Sulfate	Iron, Total
Fecal Coliform	Sulfide	Magnesium, Total
Fluoride	Sulfite	Molybdenum, Total
Nitrate-Nitrite	Surfactants	Manganese, Total
Nitrogen, Total Organic	Aluminum, Total	Tin, Total
Oil and Grease	Barium, Total	Titanium, Total

Table V – Toxic Pollutants and Hazardous Substances Required to be Identified by Existing Dischargers if Expected to be Present

Toxic Pollutants		
Asbestos		
Hazardous Substances		
Acetaldehyde	Dinitrobenzene	Nitrotoluene
Allyl alcohol	Diquat	Parathion
Allyl chloride	Disulfoton	Phenolsulfonate
Amyl acetate	Diuron	Phosgene
Aniline	Epichlorohydrin	Propargite
Benzonitrile	Ethion	Propylene oxide
Benzyl chloride	Ethylene diamine	Pyrethrins
Butyl acetate	Ethylene dibromide	Quinoline
Butylamine	Formaldehyde	Resorcinol
Captan	Furfural	Strontium
Carbaryl	Guthion	Strychnine
Carbofuran	Isoprene	Styrene
Carbon disulfide	Isopropanolamine	2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
Chlorpyrifos	Dodecylbenzenesulfonate	
Coumaphos	Kelthane	TDE (Tetrachlorodiphenylethane)
Cresol	Kepone	2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Crotonaldehyde	Malathion	
Cyclohexane	Mercaptodimethur	Trichlorofan
2,4-D (2,4-Dichlorophenoxy acetic acid)	Methoxychlor	Triethanolamine
	Methyl mercaptan	dodecylbenzenesulfonate
Diazinon	Methyl methacrylate	Triethylamine
Dicamba	Methyl parathion	Trimethylamine
Dichlobenil	Mevinphos	Uranium
Dichlone	Mexacarbate	Vanadium
2,2-Dichloropropionic acid	Monoethyl amine	Vinyl acetate
Dichlorvos	Monomethyl amine	Xylene
Diethyl amine	Naled	Xylenol
Dimethyl amine	Napthenic acid	Zircon

E. Suspensions

The Environmental Protection Agency has suspended the requirements of 40 CFR 122.21(g)(7)(ii)(A) and Table I as they apply to certain industrial categories. The suspensions are as follows:

1. At 46 FR 2046, Jan. 8, 1981, the Environmental Protection Agency suspended until further notice §122.21(g)(7)(ii)(A) as it applies to coal mines.
2. At 46 FR 22585, Apr. 20, 1981, the Environmental Protection Agency suspended until further notice §122.21(g)(7)(ii)(A) and the corresponding portions of Item V-C of the NPDES application Form 2c as they apply to:
 - a. Testing and reporting for all four organic fractions in the Greige Mills Subcategory of the Textile Mills industry (Subpart C—Low water use processing of 40 CFR part 410), and testing and reporting for the pesticide fraction in all other subcategories of this industrial category.
 - b. Testing and reporting for the volatile, base/neutral and pesticide fractions in the Base and Precious Metals Subcategory of the Ore Mining and Dressing industry (subpart B of 40 CFR part 440), and testing and reporting for all four fractions in all other subcategories of this industrial category.
 - c. Testing and reporting for all four GC/MS fractions in the Porcelain Enameling industry.
3. At 46 FR 35090, July 1, 1981, the Environmental Protection Agency suspended until further notice §122.21(g)(7)(ii)(A) and the corresponding portions of Item V-C of the NPDES application Form 2c as they apply to:
 - a. Testing and reporting for the pesticide fraction in the Tall Oil Rosin Subcategory (subpart D) and Rosin-Based Derivatives Subcategory (subpart F) of the Gum and Wood Chemicals industry (40 CFR part 454), and testing and reporting for the pesticide and base/neutral fractions in all other subcategories of this industrial category.
 - b. Testing and reporting for the pesticide fraction in the Leather Tanning and Finishing, Paint and Ink Formulation, and Photographic Supplies industrial categories.
 - c. Testing and reporting for the acid, base/neutral and pesticide fractions in the Petroleum Refining industrial category.
 - d. Testing and reporting for the pesticide fraction in the Papergrade Sulfite subcategories (subparts J and U) of the Pulp and Paper industry (40 CFR part 430); testing and reporting for the base/neutral and pesticide fractions in the following subcategories: Deink (subpart Q), Dissolving Kraft (subpart F), and Paperboard from Waste Paper (subpart E); testing and reporting for the volatile, base/neutral and pesticide fractions in the following subcategories: BCT Bleached Kraft (subpart H), Semi-Chemical (subparts B and C), and Nonintegrated-Fine Papers (subpart R); and testing and reporting for the acid, base/neutral, and pesticide fractions in the following subcategories: Fine Bleached Kraft (subpart I), Dissolving Sulfite Pulp (subpart K), Groundwood-Fine Papers (subpart O), Market Bleached Kraft (subpart G), Tissue from Wastepaper (subpart T), and Nonintegrated-Tissue Papers (subpart S).
 - e. Testing and reporting for the base/neutral fraction in the Once-Through Cooling Water, Fly Ash and Bottom Ash Transport Water process wastestreams of the Steam Electric Power Plant industrial category.

4. For the duration of the suspensions, therefore, Table I effectively reads:

Table VI – Testing Requirements for Organic Toxic Pollutants by Industry Category
GC/MS fraction²

Industry category	GC/MS fraction ²			
	Volatile	Acid	Neutral	Pesticide
Adhesives and sealants	1	1	1	
Aluminum forming	1	1	1	
Auto and other laundries	1	1	1	1
Battery manufacturing	1		1	
Coal mining				
Coil coating	1	1	1	
Copper forming	1	1	1	
Electric and electronic compounds	1	1	1	1
Electroplating	1	1	1	
Explosives manufacturing		1	1	
Foundries	1	1	1	
Gum and wood (all subparts except D and F)	1	1		
Subpart D—tall oil rosin	1	1	1	
Subpart F—rosin-based derivatives	1	1	1	
Inorganic chemicals manufacturing	1	1	1	
Iron and steel manufacturing	1	1	1	
Leather tanning and finishing	1	1	1	
Mechanical products manufacturing	1	1	1	
Nonferrous metals manufacturing	1	1	1	1
Ore mining (applies to the base and precious metals/Subpart B)		1		
Organic chemicals manufacturing	1	1	1	1
Paint and ink formulation	1	1	1	
Pesticides	1	1	1	1
Petroleum refining	1			
Pharmaceutical preparations	1	1	1	
Photographic equipment and supplies	1	1	1	
Plastic and synthetic materials manufacturing	1	1	1	1
Plastic processing	1			
Porcelain enameling				
Printing and publishing	1	1	1	1
Pulp and paperboard mills—see Table VII				
Rubber processing	1	1	1	
Soap and detergent manufacturing	1	1	1	
Steam electric power plants	1	1		
Textile mills (Subpart C—Greige Mills are exempt from this table)	1	1	1	
Timber products processing	1	1	1	1

¹Testing required.

²The pollutants in each fraction are listed in Table II.

Table VII – Pulp and Paperboard Mills:

Subpart ³	GS/MS fractions			
	VOA	Acid	Base/neutral	Pesticides
A	2	1	2	1
B	2	1	2	2
C	2	1	2	2
D	2	1	2	2
E	1	1	2	1
F	1	1	2	2
G	1	1	2	2
H	1	1	2	2
I	1	1	2	2
J	1	1	1	2
K	1	1	2	2
L	1	1	2	2
M	1	1	2	2
N	1	1	2	2
O	1	1	2	2
P	1	1	2	2
Q	1	1	2	1
R	2	1	2	2
S	1	1	2	1
T	1	1	2	1
U	1	1	1	2

¹Must test.

²Do not test unless “reason to believe” it is discharged.

³Subparts are defined in 40 CFR Part 430.

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