

---

Permits Division

---



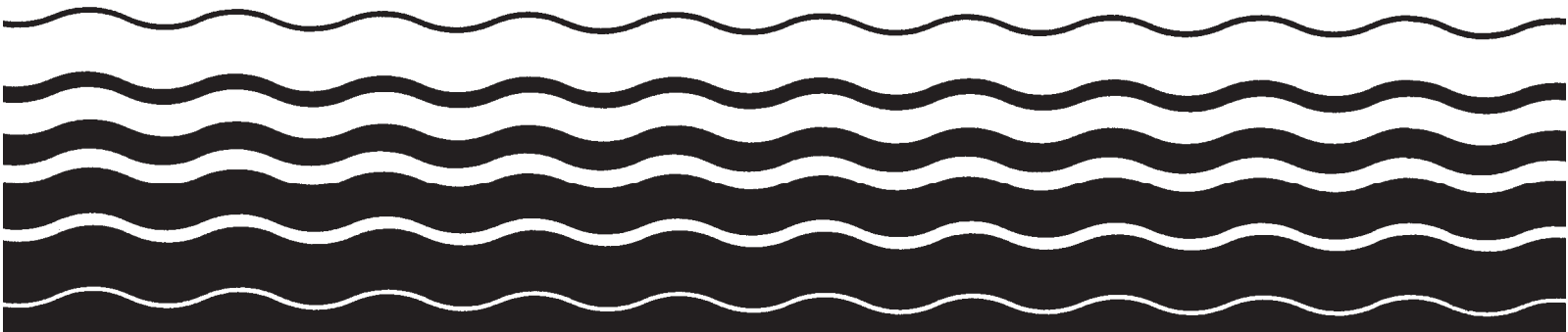
# Application Form 2C – Wastewater Discharge Information

## Consolidated Permits Program

This form must be completed by all persons applying for an EPA permit to discharge wastewater (*existing manufacturing, commercial, mining, and silvicultural operations*).



Printed on recycled paper



### **Paperwork Reduction Act Notice**

The public reporting burden for this collection of information is estimated to average 33 hours per response. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information to the Chief, Information Policy Branch (PM-223), US Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked **Attention:** Desk Officer for EPA.



**INSTRUCTIONS – FORM 2c**  
**Application for Permit to Discharge Wastewater**  
**EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL OPERATIONS**

This form must be completed by all applicants who check “yes” to item II-C in Form 1.

**Public Availability of Submitted Information.**

Your application will not be considered complete unless you answer every question on this form and on Form 1. If an item does not apply to you, enter “NA” (*for not applicable*) to show that you considered the question.

You may not claim as confidential any information required by this form or Form 1, whether the information is reported on the forms or in an attachment. This information will be made available to the public upon request.

Any information you submit to EPA which goes beyond that required by this form or Form 1 you may claim as confidential, but claims for information which is effluent data will be denied. If you do not assert a claim of confidentiality at the time of submitting the information, EPA may make the information public without further notice to you. Claims of confidentiality will be handled in accordance with EPA’s business confidentiality regulations at 40 CFR Part 2.

**Definitions**

All significant terms used in these instructions and in the form are defined in the glossary found in the General Instructions which accompany Form 1.

**EPA ID Number**

Fill in your EPA Identification Number at the top of each page of Form 2c. You may copy this number directly from item I of Form 1.

**Item I**

You may use the map you provided for item XI of Form 1 to determine the latitude and longitude of each of your outfalls and the name of the receiving water.

**Item II-A**

The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water, and stormwater runoff. You may group similar operations into a single unit, labeled to correspond to the more detailed listing in item II-B. The water balance should show average flows. Show all significant losses of water to products, atmosphere, and discharge. You should use actual measurements whenever available; otherwise use your best estimate. An example of an acceptable line drawing appears in Figure 2c-1 to these instructions.

**Item II-B**

List all sources of wastewater to each outfall. Operations may be described in general terms (*for example, “dye-making reactor” or “distillation tower”*). You may estimate the flow contributed by each source if no data are available. For stormwater discharges you may estimate the average flow, but you must indicate the rainfall event upon which the estimate is based and the method of estimation. For each treatment unit, indicate its size, flow rate, and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table 2c-1 to fill in column 3-b for each treatment unit. Insert “XX” into column 3-b if no code corresponds to a treatment unit you list. If you are applying for a permit for a privately owned treatment works, you must also identify all of your contributors in an attached listing.

**Item II-C**

A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the

“Maximum Daily” columns (*columns 4-a-2 and 4-b-2*). Report the average of all daily values measured during days when discharge occurred within the last year in the “Long Term Average” columns (*columns 4-a-1 and 4-b-1*).

**Item III-A**

All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by a BPT, BCT, or BAT guideline. If you are unsure whether you are covered by a promulgated effluent guideline, check with your EPA Regional office (*Table 1 in the Form 1 instructions*). You must check “yes” if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check “no.”

**Item III-B**

An effluent guideline is expressed in terms of production (*or other measure of operation*) if the limitation is expressed as mass of pollutant per operational parameter; for example, “pounds of BOD per cubic foot of logs from which bark is removed,” or “pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace.” An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

**Item III-C**

This item must be completed only if you checked “yes” to item III-B. The production information requested here is necessary to apply effluent guidelines to your facility and you cannot claim it as confidential. However, you do not have to indicate how the reported information was calculated. Report quantities in the units of measurement used in the applicable effluent guideline. The production figures provided must be based on actual daily production and not on design capacity or on predictions of future operations. To obtain alternate limits under 40 CFR 122.45(b)(2)(ii), you must define your maximum production capability and demonstrate to the Director that your actual production is substantially below maximum production capability and that there is a reasonable potential for an increase above actual production during the duration of the permit.

**Item IV-A**

If you check “yes” to this question, complete all parts of the chart, or attach a copy of any previous submission you have made to EPA containing same information.

**Item IV-B**

You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

**Item V-A, B, C, and D**

The items require you to collect and report data on the pollutants discharged for each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

**General Instructions**

Part A requires you to report at least one analysis for each pollutant listed. Parts B and C require you to report analytical data in two ways. For some pollutants, you may be required to mark “X” in the “Testing Required” column (*column 2-a, Part C*), and test (*sample and analyze*) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all others, you must mark “X” in either the “Believe Present” column or the “Believe Absent” column (*columns 2-a or 2-b, Part B, and columns 2-b or 2-c, Part C*) based on your best estimate, and test for those which you believe to be present. (*See specific instructions on the form and below for Parts A through D.*) Base your determination that a pollutant is present in or absent from your discharge on your

**Item V-A, B, C, and D (continued)**

knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated stormwater runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an 'X' in the "Intake" column.

**A. Reporting.** All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out pages V-1 to V-9 if the separate sheets contain all the required information in a format which is consistent with pages V-1 to V-9 in spacing and in identification of pollutants and columns. (For example, the data system used in your GC/MS analysis may be able to print data in the proper format.) Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Parts B and C).

Concentration	Mass
ppm.....parts per million	lbs.....pounds
mg/l ...milligrams per liter	ton.....tons (English tons)
ppb.....parts per billion	mg.....milligrams
ug/l ...micrograms per liter	g.....grams
	kg.....kilograms
	T.....tonnes (metric tons)

All reporting of values for metals must be in terms of "total recoverable metal," unless:

- (1) An applicable, promulgated effluent limitation or standard specifies the limitation for the metal in dissolved, valent, or total form; or
- (2) All approved analytical methods for the metal inherently measure only its dissolved form (e.g., hexavalent chromium); or
- (3) The permitting authority has determined that in establishing case-by-case limitations it is necessary to express the limitations on the metal in dissolved, valent, or total form to carry out the provisions of the CWA.

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert '1' into the "Number of Analyses" column (columns 2-a and 2-d, Part A, and column 3-a, 3-d, Parts B and C). The permitting authority may require you to conduct additional analyses to further characterize your discharges. For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24-hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24-hour period.

If you measure more than one daily value for a pollutant and those values are representative of your wastestream, you must report them. You must describe your method of testing and data analysis. You also must determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" columns (column 2-c, Part A, and column 3-c, Parts B and C), and the total number of daily values under the "Number of Analyses" columns (column 2-d, Part A, and columns 3-d, Parts B and C). Also, determine the average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30-day Values" columns (column 2-c, Part A, and column 3-b, Parts B and C).

**B. Sampling:** The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your EPA or State permitting authority for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding

times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit, or at any site adequate for the collection of a representative sample.

For pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, and fecal coliform, grab samples must be used. For all other pollutants 24-hour composite samples must be used. However, a minimum of one grab sample may be taken for effluents from holding ponds or other impoundments with a retention period of greater than 24 hours. For stormwater discharges a minimum of one to four grab samples may be taken, depending on the duration of the discharge. One grab must be taken in the first hour (or less) of discharge, with one additional grab (up to a minimum of four) taken in each succeeding hour of discharge for discharges lasting four or more hours. The Director may waive composite sampling for any outfall for which you demonstrate that use of an automatic sampler is infeasible and that a minimum of four grab samples will be representative of your discharge.

Grab and composite samples are defined as follows:

**Grab sample:** An individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

**Composite sample:** A combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. For GC/MS Volatile Organic Analysis (VOA), aliquots must be combined in the laboratory immediately before analysis. Four (4) (rather than eight) aliquots or grab samples should be collected for VOA. These four samples should be collected during actual hours of discharge over a 24-hour period and need not be flow proportioned. Only one analysis is required.

The Agency is currently reviewing sampling requirements in light of recent research on testing methods. Upon completion of its review, the Agency plans to propose changes to the sampling requirements.

Data from samples taken in the past may be used, provided that:

- All data requirements are met;
- Sampling was done no more than three years before submission; and
- All data are representative of the present discharge.

Among the factors which would cause the data to be unrepresentative are significant changes in production level, changes in raw materials, processes, or final products, and changes in wastewater treatment. When the Agency promulgates new analytical methods in 40 CFR Part 136, EPA will provide information as to when you should use the new methods to generate data on your discharges. Of course, the Director may request additional information, including current quantitative data, if she or he determines it to be necessary to assess your discharges.

**C. Analysis:** You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding time, preservation techniques, and the quality control measures which you used. If you have two or more substantially identical outfalls, you may request permission from your permitting authority to sample and analyse only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the

**Item V-A, B, C, and D (continued)**

permitting authority, on a separate sheet attached to the application form, identify which outfall you did test, and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

**D. Reporting of Intake Data:** You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. NPDES regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (*if your water is treated before use, test the water after it is treated*), and discuss the requirements for a net limitation with your permitting authority.

**Part V-A**

Part V-A must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Director may waive the requirement to test for one or more of these pollutants, upon a determination that available information is adequate to support issuance of the permit with less stringent reporting requirements for these pollutants. You also may request a waiver for one or more of these pollutants for your category or subcategory from the Director, Office of Water Enforcement and Permits. See discussion in General Instructions to item V for definitions of the columns in Part A. The "Long Term Average Values" column (*column 2-c*) and "Maximum 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

Use composite samples for all pollutants in this Part, except use grab samples for pH and temperature. See discussion in General Instructions to Item V for definitions of the columns in Part A. The "Long Term Average Values" column (*column 2-c*) and "Maximum 30-Day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

**Part V-B**

Part V-B must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. You must report quantitative data if the pollutant(s) in question is limited in an effluent limitations guideline either directly, or indirectly but expressly through limitation on an indicator (*e.g., use of TSS as an indicator to control the discharge of iron and aluminum*). For other discharged pollutants you must provide quantitative data or explain their presence in your discharge. EPA will consider requests to the Director of the Office of Water Enforcement and Permits to eliminate the requirement to test for pollutants for an industrial category or subcategory. Your request must be supported by data representative of the industrial category or subcategory in question. The data must demonstrate that individual testing for each applicant is unnecessary, because the facilities in the category or subcategory discharge substantially identical levels of the pollutant or discharge the pollutant uniformly at sufficiently low levels. Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease, and fecal coliform. The "Long Term Average Values" column (*column 3-c*) and "Maximum 30-day Values" column (*column 3-b*) are not compulsory but should be filled out if data are available.

**Part V-C**

Table 2c-2 lists the 34 "primary" industry categories in the lefthand column. For each outfall, if any of your processes which contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (*column 2-a*) and test for (1) all of the toxic metals, cyanide, and total phenols, and (2) the organic toxic pollutants contained in Table 2c-2 as applicable to your category, unless you qualify as a small business (*see below*). The organic toxic pollutants are listed by GC/MS fractions on pages V-4 to V-9 in Part V-C. For example, the Organic Chemicals Industry has an asterisk in all four fractions; therefore, applicants in this category must test for all organic toxic pollutants in Part V-C. The inclusion of total phenols in Part V-C is not intended to classify total phenols as a toxic pollutant. If you are applying for a permit for a privately owned

treatment works, determine your testing requirements on the basis of the industry categories of your contributors. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category (*for example, for deciding whether an effluent guideline is applicable*) before your permit is issued. For all other cases (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), you must mark "X" in either the "Believed Present" column (*column 2-b*) or the "Believed Absent" column (*column 2-c*) for each pollutant. For every pollutant you know or have reason to believe is present in your discharge in concentrations of 10 ppb or greater, you must report quantitative data. For acrolein, acrylonitrile, 2, 4 dinitrophenol, and 2-methyl-4, 6 dinitrophenol, where you expect these four pollutants to be discharged in concentrations of 100 ppb or greater, you must report quantitative data. For every pollutant expected to be discharged in concentrations less than the thresholds specified above, you must either submit quantitative data or briefly describe the reasons the pollutant is expected to be discharged. At your request the Director, Office of Water Enforcement and Permits, may waive the requirement to test for pollutants for an industrial category or subcategory. Your request must be supported by data representatives of the industrial category or subcategory in question. The data must demonstrate that individual testing for each applicant is unnecessary, because the facilities in question discharge substantially identical levels of the pollutant, or discharge the pollutant uniformly at sufficiently low levels. If you qualify as a small business (*see below*) you are exempt from testing for the organic toxic pollutants, listed on pages V-4 to V-9 in Part C. For pollutants in intake water, see discussion in General Instructions to this item. The "Long Term Average Values" column (*column 3-c*) and "Maximum 30-day Values" column (*column 3-b*) are not compulsory but should be filled out if data are available. You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

- (a) 2,4,5-trichlorophenoxy acetic acid, (2,4,5-T);
- (b) 2-(2,4,5-trichlorophenoxy) propanoic acid, (Silvex, 2,4,5-TP)
- (c) 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate, (Erbon);
- (d) 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate, (Ronnel);
- (e) 2,4,5-trichlorophenol, (TCP); or
- (f) hexachlorophene, (HCP).

If you mark "Testing Required" or "Believed Present," you must perform a screening analysis for dioxins, using gas chromatography with an electron capture detector. A TCDD standard for quantitation is not required. Describe the results of this analysis in the space provided; for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The permitting authority may require you to perform a quantitative analysis if you report a positive result. The Effluent Guidelines Division of EPA has collected and analyzed samples from some plants for the pollutants listed in Part C in the course of its BAT guidelines development program. If your effluents are sampled and analyzed as part of this program in the last three years, you may use these data to answer Part C provided that the permitting authority approves, and provided that no process change or change in raw materials or operating practices has occurred since the samples were taken that would make the analyses unrepresentative of your current discharge.

**Small Business Exemption:** If you qualify as a "small business", you are exempt from the reporting requirements for the organic toxic pollutants, listed on pages V-4 to V-9 in Part C. There are two ways in which you can qualify as a "small business." If your facility is a coal mine, and if your probable total annual production is less than 100,000 tons per year, you may submit past production data or estimated future production (*such as a schedule of estimated total production under 30 CFR § 795.14(c)*) instead of conducting analyses for the organic toxic pollutants. If your facility is not a coal mine, and if your gross total annual sales for the most recent three years average less than \$100,000 per year (*in second quarter 1980*)



**Item V-A, B, C, and D (continued)**

dollars), you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants. The production or sales data must be for the facility which is the source of the discharge. The data should not be limited to production or sales for the process or processes which contribute to the discharge, unless those are the only processes at your facility. For sales data, in situations involving intracorporate transfer of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national product price deflator (*second quarter of 1980=100*). This index is available in *National Income and Product Accounts of the United States (Department of Commerce, Bureau of Economic Analysis)*.

**Part V-D**

List any pollutants in Table 2c-3 that you believe to be present and explain why you believe them to be present. No analysis is required, but if you have analytical data, you must report it.

**Note:** Under 40 CFR 117.12(a)(2), certain discharges of hazardous substances (*listed in Table 2c-4 of these instructions*) may be exempted from the requirements of section 311 of CWA, which establishes reporting requirements, civil penalties and liability for cleanup costs for spills of oil and hazardous substances. A discharge of a particular substance may be exempted if the origin, source, and amount of the discharged substances are identified in the NDPE permit application or in the permit, if the permit contains a requirement for treatment of the discharge, and if the treatment is in place. To apply for an exclusion of the discharge of any hazardous substance from the requirements of section 311, attach additional sheets of paper to your form, setting forth the following information:

1. The substance and the amount of each substance which may be discharged.
2. The origin and source of the discharge of the substance.
3. The treatment which is to be provided for the discharge by:
  - a. An onsite treatment system separate from any treatment system treating your normal discharge;
  - b. A treatment system designed to treat your normal discharge and which is additionally capable of treating the amount of the substance identified under paragraph 1 above; or
  - c. Any combination of the above.

See 40 CFR §117.12(a)(2) and (c) published on August 29, 1979, in 44 FR 50766, or contact your Regional Office (*Table 1 on Form 1, Instructions*), for further information on exclusions from section 311.

**Item VI**

This requirement applies to current use or manufacture of a toxic pollutant as an intermediate or final product or byproduct. The Director may waive or modify the requirement if you demonstrate that it would be unduly burdensome to identify each toxic pollutant and the Director has adequate information to issue your permit. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts.

**Item VII**

Self explanatory. The permitting authority may ask you to provide additional details after your application is received.

**Item IX**

The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application,... shall upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than six months, or by both."

40 CFR Part 122.22 requires the certification to be signed as follows:

(A) *For a corporation:* by a responsible corporate official. For purposes of this section, a responsible corporate official means (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (*in second-quarter 1980 dollars*), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

**Note:** EPA does not require specific assignments or delegation of authority to responsible corporate officers identified in §122.22(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate position under §122.22(a)(1)(ii) rather than to specific individuals.

(B) *For a partnership or sole proprietorship:* by a general partner or the proprietor, respectively; or

(C) *For a municipality, State, Federal, or other public agency:* by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal Agency includes (i) the chief executive officer of the Agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the Agency (e.g., *Regional Administrators of EPA*). Applications for Group II stormwater dischargers may be signed by a duly authorized representative (*as defined in 40 CFR 122.22(b)*) of the individuals identified above.

## CODES FOR TREATMENT UNITS

---

### PHYSICAL TREATMENT PROCESSES

1-A . . . . .	Ammonia Stripping	1-M . . . . .	Grit Removal
1-B . . . . .	Dialysis	1-N . . . . .	Microstraining
1-C . . . . .	Diatomaceous Earth Filtration	1-O . . . . .	Mixing
1-D . . . . .	Distillation	1-P . . . . .	Moving Bed Filters
1-E . . . . .	Electrodialysis	1-Q . . . . .	Multimedia Filtration
1-F . . . . .	Evaporation	1-R . . . . .	Rapid Sand Filtration
1-G . . . . .	Flocculation	1-S . . . . .	Reverse Osmosis ( <i>Hyperfiltration</i> )
1-H . . . . .	Flotation	1-T . . . . .	Screening
1-I . . . . .	Foam Fractionation	1-U . . . . .	Sedimentation ( <i>Settling</i> )
1-J . . . . .	Freezing	1-V . . . . .	Slow Sand Filtration
1-K . . . . .	Gas-Phase Separation	1-W . . . . .	Solvent Extraction
1-L . . . . .	Grinding ( <i>Comminutors</i> )	1-X . . . . .	Sorption

### CHEMICAL TREATMENT PROCESSES

2-A . . . . .	Carbon Adsorption	2-G . . . . .	Disinfection ( <i>Ozone</i> )
2-B . . . . .	Chemical Oxidation	2-H . . . . .	Disinfection ( <i>Other</i> )
2-C . . . . .	Chemical Precipitation	2-I . . . . .	Electrochemical Treatment
2-D . . . . .	Coagulation	2-J . . . . .	Ion Exchange
2-E . . . . .	Dechlorination	2-K . . . . .	Neutralization
2-F . . . . .	Disinfection ( <i>Chlorine</i> )	2-L . . . . .	Reduction

### BIOLOGICAL TREATMENT PROCESSES

3-A . . . . .	Activated Sludge	3-E . . . . .	Pre-Aeration
3-B . . . . .	Aerated Lagoons	3-F . . . . .	Spray Irrigation/Land Application
3-C . . . . .	Anaerobic Treatment	3-G . . . . .	Stabilization Ponds
3-D . . . . .	Nitrification-Denitrification	3-H . . . . .	Trickling Filtration

### OTHER PROCESSES

4-A . . . . .	Discharge to Surface Water	4-C . . . . .	Reuse/Recycle of Treated Effluent
4-B . . . . .	Ocean Discharge Through Outfall	4-D . . . . .	Underground Injection

### SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A . . . . .	Aerobic Digestion	5-M . . . . .	Heat Drying
5-B . . . . .	Anaerobic Digestion	5-N . . . . .	Heat Treatment
5-C . . . . .	Belt Filtration	5-O . . . . .	Incineration
5-D . . . . .	Centrifugation	5-P . . . . .	Land Application
5-E . . . . .	Chemical Conditioning	5-Q . . . . .	Landfill
5-F . . . . .	Chlorine Treatment	5-R . . . . .	Pressure Filtration
5-G . . . . .	Composting	5-S . . . . .	Pyrolysis
5-H . . . . .	Drying Beds	5-T . . . . .	Sludge Lagoons
5-I . . . . .	Elutriation	5-U . . . . .	Vacuum Filtration
5-J . . . . .	Flotation Thickening	5-V . . . . .	Vibration
5-K . . . . .	Freezing	5-W . . . . .	Wet Oxidation
5-L . . . . .	Gravity Thickening		

**TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY\***

INDUSTRY CATEGORY	GC/MS FRACTION <sup>1</sup>			
	Volatile	Acid	Base/Neutral	Pesticide
Adhesives and sealants .....	X	X	X	-
Aluminum forming .....	X	X	X	-
Auto and other laundries .....	X	X	X	X
Battery manufacturing .....	X	-	X	-
Coal mining .....	X	X	X	X
Coil coating .....	X	X	X	-
Copper forming .....	X	X	X	-
Electric and electronic compounds .....	X	X	X	X
Electroplating .....	X	X	X	-
Explosives manufacturing .....	-	X	X	-
Foundries .....	X	X	X	-
Gum and wood chemicals .....	X	X	X	X
Inorganic chemicals manufacturing .....	X	X	X	-
Iron and steel manufacturing .....	X	X	X	-
Leather tanning and finishing .....	X	X	X	X
Mechanical products manufacturing .....	X	X	X	-
Nonferrous metals manufacturing .....	X	X	X	X
Ore mining .....	X	X	X	X
Organic chemicals manufacturing .....	X	X	X	X
Paint and ink formulation .....	X	X	X	X
Pesticides .....	X	X	X	X
Petroleum refining .....	X	X	X	X
Pharmaceutical preparations .....	X	X	X	-
Photographic equipment and supplies .....	X	X	X	X
Plastic and synthetic materials manufacturing .....	X	X	X	X
Plastic processing .....	X	-	-	-
Porcelain enameling .....	X	-	X	X
Printing and publishing .....	X	X	X	X
Pulp and paperboard mills .....	X	X	X	X
Rubber processing .....	X	X	X	-
Soap and detergent manufacturing .....	X	X	X	-
Steam electric power plants .....	X	X	X	-
Textile mills .....	X	X	X	X
Timber products processing .....	X	X	X	X

\*See note at conclusion of 40 CFR Part 122, Appendix D (1983) for explanation of effect of suspensions on testing requirements for primary industry categories.

<sup>1</sup>The pollutants in each fraction are listed in Item V-C.

X = Testing required.

- = Testing not required.



**TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES  
REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT**

---

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

## HAZARDOUS SUBSTANCES

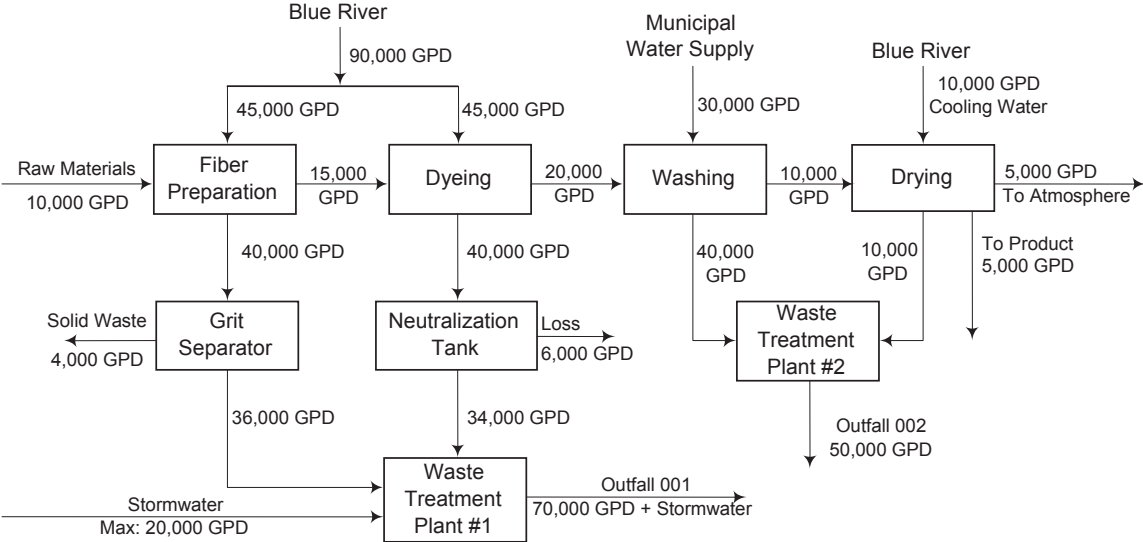
1. Acetaldehyde	74. Carbaryl	145. Formaldehyde
2. Acetic acid	75. Carbofuran	146. Formic acid
3. Acetic anhydride	76. Carbon disulfide	147. Fumaric acid
4. Acetone cyanohydrin	77. Carbon tetrachloride	148. Furfural
5. Acetyl bromide	78. Chlordane	149. Guthion
6. Acetyl chloride	79. Chlorine	150. Heptachlor
7. Acrolein	80. Chlorobenzene	151. Hexachlorocyclopentadiene
8. Acrylonitrile	81. Chloroform	152. Hydrochloric acid
9. Adipic acid	82. Chloropyrifos	153. Hydrofluoric acid
10. Aldrin	83. Chlorosulfonic acid	154. Hydrogen cyanide
11. Allyl alcohol	84. Chromic acetate	155. Hydrogen sulfide
12. Allyl chloride	85. Chromic acid	156. Isoprene
13. Aluminum sulfate	86. Chromic sulfate	157. Isopropanolamine
14. Ammonia	87. Chromous chloride	dodecylbenzenesulfonate
15. Ammonium acetate	88. Cobaltous bromide	158. Kelthane
16. Ammonium benzoate	89. Cobaltous formate	159. Kepone
17. Ammonium bicarbonate	90. Cobaltous sulfamate	160. Lead acetate
18. Ammonium bichromate	91. Coumaphos	161. Lead arsenate
19. Ammonium bifluoride	92. Cresol	162. Lead chloride
20. Ammonium bisulfite	93. Crotonaldehyde	163. Lead fluoborate
21. Ammonium carbamate	94. Cupric acetate	164. Lead flourite
22. Ammonium carbonate	95. Cupric acetoarsenite	165. Lead iodide
23. Ammonium chloride	96. Cupric chloride	166. Lead nitrate
24. Ammonium chromate	97. Cupric nitrate	167. Lead stearate
25. Ammonium citrate	98. Cupric oxalate	168. Lead sulfate
26. Ammonium fluoroborate	99. Cupric sulfate	169. Lead sulfide
27. Ammonium fluoride	100. Cupric sulfate ammoniated	170. Lead thiocyanate
28. Ammonium hydroxide	101. Cupric tartrate	171. Lindane
29. Ammonium oxalate	102. Cyanogen chloride	172. Lithium chromate
30. Ammonium silicofluoride	103. Cyclohexane	173. Malathion
31. Ammonium sulfamate	104. 2,4-D acid (2,4- Dichlorophenoxyacetic acid)	174. Maleic acid
32. Ammonium sulfide	105. 2,4-D esters (2,4- Dichlorophenoxyacetic acid esters)	175. Maleic anhydride
33. Ammonium sulfite	106. DDT	176. Mercaptodimethur
34. Ammonium tartrate	107. Diazinon	177. Mercuric cyanide
35. Ammonium thiocyanate	108. Dicamba	178. Mercuric nitrate
36. Ammonium thiosulfate	109. Dichlobenil	179. Mercuric sulfate
37. Amyl acetate	110. Dichlone	180. Mercuric thiocyanate
38. Aniline	111. Dichlorobenzene	181. Mercurous nitrate
39. Antimony pentachloride	112. Dichloropropane	182. Methoxychlor
40. Antimony potassium tartrate	113. Dichloropropene	183. Methyl mercaptan
41. Antimony tribromide	114. Dichloropropene-dichloropropane mix	184. Methyl methacrylate
42. Antimony trichloride	115. 2,2-Dichloropropionic acid	185. Methyl parathion
43. Antimony trifluoride	116. Dichlorvos	186. Mevinphos
44. Antimony trioxide	117. Dieldrin	187. Mexacarbate
45. Arsenic disulfide	118. Diethylamine	188. Monoethylamine
46. Arsenic pentoxide	119. Dimethylamine	189. Monomethylamine
47. Arsenic trichloride	120. Dinitrobenzene	190. Naled
48. Arsenic trioxide	121. Dinitrophenol	191. Naphthalene
49. Arsenic trisulfide	122. Dinitrotoluene	192. Naphthenic acid
50. Barium cyanide	123. Diquat	193. Nickel ammonium sulfate
51. Benzene	124. Disulfoton	194. Nickel chloride
52. Benzoic acid	125. Diuron	195. Nickel hydroxide
53. Benzointrile	126. Dodecylbenzenesulfonic acid	196. Nickel nitrate
54. Benzoyl chloride	127. Endosulfan	197. Nickel sulfate
55. Benzyl chloride	128. Endrin	198. Nitric acid
56. Beryllium chloride	129. Epichlorohydrin	199. Nitrobenzene
57. Beryllium fluoride	130. Ethion	200. Nitrogen dioxide
58. Beryllium nitrate	131. Ethylbenzene	201. Nitrophenol
59. Butylacetate	132. Ethylenediamine	202. Nitrotoluene
60. n-Butylphthalate	133. Ethylene dibromide	203. Paraformaldehyde
61. Butylamine	134. Ethylene dichloride	204. Parathion
62. Butyric acid	135. Ethylene diaminetetracetic acid (EDTA)	205. Pentachlorophenol
63. Cadmium acetate	136. Ferric ammonium citrate	206. Phenol
64. Cadmium bromide	137. Ferric ammonium oxalate	207. Phosgene
65. Cadmium chloride	138. Ferric chloride	208. Phosphoric acid
66. Calcium arsenate	139. Ferric fluoride	209. Phosphorus
67. Calcium arsenite	140. Ferric nitrate	210. Phosphorus oxychloride
69. Calcium carbide	141. Ferric sulfate	211. Phosphorus pentasulfide
69. Calcium chromate	142. Ferrous ammonium sulfate	212. Phosphorus trichloride
70. Calcium cyanide	143. Ferrous chloride	213. Polychlorinated biphenyls (PCB)
71. Calcium dodecylbenzenesulfonate	144. Ferrous sulfate	214. Potassium arsenate
72. Calcium hypochlorite		215. Potassium arsenite
73. Captan		216. Potassium bichromate

## HAZARDOUS SUBSTANCES

---

217. Potassium chromate	247. Sodium selenite	270. Trimethylamine
218. Potassium cyanide	248. Strontium chromate	271. Uranyl acetate
219. Potassium hydroxide	249. Strychnine	272. Uranyl nitrate
220. Potassium permanganate	250. Styrene	273. Vanadium penoxide
221. Propargite	251. Sulfuric acid	274. Vanadyl sulfate
222. Propionic acid	252. Sulfur monochloride	275. Vinyl acetate
223. Propionic anhydride	253. 2,4,5-T acid (2,4,5- Trichlorophenoxyacetic acid)	276. Vinylidene chloride
224. Propylene oxide	254. 2,4,5-T amines (2,4,5-Trichlorophenoxy acetic acid amines)	277. Xylene
225. Pyrethrins	255. 2,4,5-T esters (2,4,5 Trichlorophenoxy acetic acid esters)	278. Xylenol
226. Quinoline	256. 2,4,5-T salts (2,4,5-Trichlorophenoxy acetic acid salts)	279. Zinc acetate
227. Resorcinol	257. 2,4,5-TP acid (2,4,5-Trichlorophenoxy propanoic acid)	280. Zinc ammonium chloride
228. Selenium oxide	258. 2,4,5-TP acid esters (2,4,5- Trichlorophenoxy propanoic acid esters)	281. Zinc borate
229. Silver nitrate	259. TDE (Tetrachlorodiphenyl ethane)	282. Zinc bromide
230. Sodium	260. Tetraethyl lead	283. Zinc carbonate
231. Sodium arsenate	261. Tetraethyl pyrophosphate	284. Zinc chloride
232. Sodium arsenite	262. Thallium sulfate	285. Zinc cyanide
233. Sodium bichromate	263. Toluene	286. Zinc fluoride
234. Sodium bifluoride	264. Toxaphene	287. Zinc formate
235. Sodium bisulfite	265. Trichlorofon	288. Zinc hydrosulfite
236. Sodium chromate	266. Trichloroethylene	289. Zinc nitrate
237. Sodium cyanide	267. Trichlorophenol	290. Zinc phenolsulfonate
238. Sodium dodecylbenzenesulfonate	268. Triethanolamine	291. Zinc phosphide
239. Sodium fluoride	269. Triethylamine	292. Zinc silicofluoride
240. Sodium hydrosulfide		293. Zinc sulfate
241. Sodium hydroxide		294. Zirconium nitrate
242. Sodium hypochlorite		295. Zirconium potassium flouride
243. Sodium methylate		296. Zirconium sulfate
244. Sodium nitrite		297. Zirconium tetrachloride
245. Sodium phosphate (dibasic)		
246. Sodium phosphate (tribasic)		

LINE DRAWING



Schematic of Water Flow  
Brown Mills, Inc.  
City, County, State

Figure 2C-1