ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

APPLICATION FORM 2D

New Sources and New Dischargers

DEC Internal Use Only
Facility ID Number
_____

Please submit this form to:

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorizations Program
555 Cordova Street
Anchorage, AK 99501
DEC.Water.WQPermit@alaska.gov

Form 2D must be completed for a new manufacturing, commercial, mining, or silvicultural discharge. This form must be completed by an applicant who checked "yes" to Section 6-C in APDES Form 1. Form 2D must be completed in conjunction with Form 1. Instructions for completing this form are attached.

SECTION 1 – FACILITY INFORMATION

(This information must match the facility information entered in Section 1 on Form 1.)

Facility Name:

Physical Address/Location:

SECTION 2 – OUTFALL LOCATION

List the latitude and longitude of each outfall location to the sixth decimal place and the name of the receiving water.

Outfall Number (*list*)	Latitude	Longitude	Receiving Water *(name)*
	°	°	

Lat/Long Coordinate Source: ☐ Internet ☐ Map ☐ GPS/Survey ☐ Other_____

Source Map Scale (if applicable):

Horizontal Accuracy: Horizontal Datum:

SECTION 3 – DISCHARGE DATE

On what date do you expect to begin discharging? (mm/dd/yyyy) _____

SECTION 4 – FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

Section A: For each outfall, provide a narrative identifying each type of operation contributing wastewater to the effluent from that outfall, including process wastewater, cooling water, and storm water runoff. Also provide the average flow contributed by each operation and a description of the treatment received by the wastewater, including the ultimate disposal of any solid or liquid waste not discharged.

Outfall Number:_____

Process, Operation, or Production Area	Average Flow	Treatment

Section B: Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Section 4-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

Section C: Except for stormwater runoff, leaks, or spills, will any of the discharges described in Section A be intermittent or seasonal?

☐ Yes (*complete the following table*) ☐ No (*go to Section 5*)

Outfall Number	Frequency		Flow		
	Days Per Week (*specify average)*	Months per Year (*specify average*)	Maximum Daily Flow Rate (*in mgd*)	Maximum Total Volume (*specify with units*)	Duration *(in days*)

SECTION 5 – PRODUCTION

If there is an applicable production-based effluent guideline or a new source performance standard (NSPS), list the estimated level of production (projection of actual production level, not design) for each outfall, expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	Quantity Per Day	Units of Measure	Operation, Product, Material, etc. *(specify*)

SECTION 6 – EFFLUENT CHARACTERISTICS

Section A & B: These items require you to report estimated amounts *(both concentration and mass)* of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See Table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by DEC. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*

Section C: Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge

SECTION 7 – ENGINEERING REPORT ON WASTEWATER TREATMENT

Section 7-A: If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐ Report Available ☐ No Report

Section 7-B: Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location

SECTION 8 – OTHER INFORMATION *(Optional)*

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

SECTION 9 – CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Right to Enter Premises

By submitting this application, the applicant hereby consents to entry upon the premises by representatives of the Alaska Department of Environmental Conservation in order to: 1) have access to and copy any records that permit conditions require the applicant to keep; 2) inspect any facilities, equipment, including monitoring and control equipment, practices, or operations regulated or required under a permit; and 3) sample or monitor any substances or parameters at any location for the purpose of assuring permit compliance or as otherwise authorized by 33 U.S.C. 1251-1387 (Clean Water Act).

Print Name:_____

Signature:_____ Date:_____

INSTRUCTIONS FOR APDES FORM 2D
New Sources and New Dischargers: Application to Discharge Process Wastewater

See Form 1 General Instructions for additional information.

Who Must File Form 2D

Form 2D must be completed in conjunction with Form 1. This form must be completed by all applicants who checked "yes" to Section 6-C in APDES Form 1. However, facilities that discharge only nonprocess wastewater that is not regulated by an effluent limitations guideline or a new source performance standard, may use APDES Form 2E. Educational, medical, and commercial chemical laboratories should use this form or APDES Form 2C. To further determine if you are a new source or a new discharger, see 18 AAC 83.990. This form should not be used for discharges of stormwater runoff.

Follow Up Requirements

Although you are now required to submit estimated data on this form (Form 2D), please note that no later than two years after you begin discharging from the proposed facility, you must complete and submit Sections 6 and 7 of APDES Form 2C. However, you need not complete those portions of Section 6 requiring tests that you have already performed under the discharge monitoring requirements of your APDES permit. In addition, DEC may waive requirements of Section 6-A and 7 if the permittee makes the demonstrations required under 18 AAC 83.310(a)(6) and 18 AAC 83.310(h).

Section 1 – Facility Information

Enter the facility's official or legal name. Do not use a colloquial name.

Section 2 – Outfall Location

Indicate the latitude and longitude of each outfall to the sixth decimal place as well as the name of the receiving water. For latitude and longitude information interpolated from a hardcopy map, the fourth decimal place is acceptable and the source map scale must be provided. Name all waters to which discharge is made and which flow into significant receiving waters. For example, if the discharge is made to a ditch which flows into an unnamed tributary which in turn flows into a named river, provide the name or description (if no name is available) of the ditch, the tributary, and the river. The preferred location information will be provided as the latitude and longitude in decimal degrees, Alaska Albers Projection, North American Datum of 1983. The preferred source of the coordinates will be by a GPS unit, but other methods will be accepted, including GPS, survey, internet (such as Topozone.com), and printed map. Clearly identify the horizontal accuracy and unit of measurement (e.g. 10 meters) and horizontal datum.

Section 3 – Discharge Date

This question requires your best estimate of the date on which your facility or new outfall will begin to discharge.

Section 4 – Flows, Sources of Pollution, and Treatment Technologies

Section 4-A

For each outfall, list all sources (operations contributing to the flow), and estimate the average flow for each source. Operations may be described in general terms (for example, "dye-making reactor" or "distillation tower"). The flow contributed by each source may be estimated if no data is available. Describe the planned treatment for these wastewaters prior to discharge in either a narrative form or by listing the proper code for the treatment unit from the list provided in Table 2D-1. Describe the ultimate disposal of any solid or liquid waste not discharged. Be sure to include the units used to indicate the average flows. Provide additional copies of this Section as necessary for each outfall.

Section 4-B

An example of an acceptable line drawing appears in Figure 2D-1 in these instructions. The line drawing should show the route taken by water in your proposed facility from intake to discharge. Show all sources of wastewater, including process and production areas, sanitary flows, cooling water, and storm water runoff. You may group similar operations into a single unit, labeled to correspond to the more detailed listing in Section 4-A. The water balance should show estimates of anticipated average flows. Show all significant losses of water to production, atmosphere, and discharge. Base your answers on your best estimates.

Section 4-C

Fill in every applicable column in this section for each source of intermittent or seasonal discharge. A discharge is intermittent if it occurs with interruptions during the operating hours of the facility, except for routine shutdowns for maintenance, process changes, or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. The reported flow rate is the highest daily value and should be measured in gallons per day. Maximum Total Volume means the total volume of any one discharge within 24 hours and is measured in units such as gallons. Base your answers on your best estimate.

Section 5 - Production

"Production" in this question refers to those goods which the proposed facility will produce, not to "wastewater" production. This information is only necessary where production-based NSPS or effluent guidelines apply to your facility. Your estimated production figures should be based on a realistic projection of actual daily production level (not design capacity) for each of the first three operating years of the facility. This estimate must be a long-term-average estimate (e.g., average production on an annual basis). If production will vary depending on long-term shifts in operating schedule or capacity, the applicant may report alternate production estimates and the basis for the alternate estimates.

If known, report quantities in the units of measurement used in the applicable NSPS or effluent guideline. For example, if the applicable NSPS is expressed as "grams of pollutant discharged per kilogram of unit production," then report maximum "Quantity Per Day" in kilograms. If you do not know whether any NSPS or effluent guideline applies to your facility, report quantities in any unit of measurement known to you. If an effluent guideline or NSPS specifies a method for estimating production, that method must be followed.

There is no need to conduct new studies to obtain these figures; only data already on hand are required. You are not required to indicate how the reported information was calculated.

Section 6 A, B, and C – Effluent Characteristics

These items require you to estimate and report data on the pollutants expected to be discharged from each of your outfalls. Where there is more than one outfall, you should submit a separate Section 6 for each outfall. For Section 6-C only a list is required. Sampling and analysis are not required at this time. If, however, data from such analyses are available, then those data should be reported. Each part of this item addresses a different set of pollutants or parameters and must be completed in accordance with the specific instructions for that part. The following are the general and specific instructions for Section 6-A through 6-C.

Section 6 - General instructions

Each part of this item requires you to provide an estimated maximum daily and average daily value for each pollutant or parameter listed (see Table 2D-2), according to the specific instructions below. The source of the data is also required.

For Parts A through C, base your determination of whether a pollutant will be present in your discharge on your knowledge of the proposed facility's raw materials, maintenance chemicals, intermediate and final products, byproducts, and any analyses of your effluent or of any similar effluent. You may also provide the determination and the estimates based on available in-house or contractor's engineering reports or any other studies performed on the proposed facility (see Section 7 of the form). If you expect a pollutant to be present solely as a result of its presence in your intake water, please state this information on the form.

Please note that no later than 2 years after you begin discharging from the proposed facility, you must complete and submit Section 6 and 7 of APDES Application Form 2C (follow-up data).

Reporting Intake Data. You are not required to report pollutants or parameters present in intake water unless you wish to demonstrate your eligibility for a "net" effluent limitation for these pollutants or parameters, that is, an effluent limitation adjusted to provide allowance for the pollutants or parameters present in your intake water. If you wish to obtain credits for pollutants or parameters present in your intake water, please insert a short statement describing why you believe you are eligible (see 18 AAC 83.545), under Section 8 (Other Information). You will then be contacted by DEC for further instructions.

All estimated pollutant or parameter levels must be reported as concentration and as total mass, except for discharge flow, temperature, and pH. Total mass is the total weight of pollutants or parameters discharged over a day.

Use the following abbreviations for units:

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

Source

In providing the estimates, use the codes in the following table to indicate the source of such information in column 4 of Sections 6-A and 6-B.

Engineering Study Code

Actual data from pilot plants 1
Estimates from other engineering studies 2
Data from other similar plants 3
Best professional estimates 4
Others……Specify on the form

Section 6-A

Estimates of data on pollutants or parameters in Group A must be reported by all applicants for all outfalls, including outfalls containing only noncontact cooling water or nonprocess wastewater.

To request a waiver from reporting any of these pollutants or parameters, the applicant must submit to DEC a written request specifying which pollutants or parameters should be waived and the reasons for requesting such a waiver. This request should be submitted to DEC before or with the permit application. DEC may waive the requirements for information about these pollutants or parameters if it is determined that less stringent reporting requirements are adequate to support issuance of the permit. No extensive documentation will normally be needed, but the applicant should contact DEC to receive instructions on what a particular request should contain.

Section 6-B

Estimates of data on pollutants in Group B must be reported by all applicants for all outfalls, including outfalls containing only noncontact cooling water or nonprocess wastewater. You are only required to report estimates for those pollutants which you know or have reason to believe will be discharged or which are limited directly by an effluent limitations guideline (or NSPS) or indirectly through promulgated limitations on an indicator pollutant. The priority pollutants in Group B are divided into the following three sections:

1. Metal toxic pollutants, total cyanide, and total phenols
2. 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD) (CAS # 1764-016)
3. Organic Toxic Pollutants (Gas Chromatography/Mass Spectrometry Fractions)
    a) Volatile compounds
    b) Acid compounds
    c) Base/neutral compounds
    d) Pesticides

For pollutants listed in groups 1 and 3 in Section B, you must report estimates as instructed above.

For group 2 in Section B, you are required to report that TCDD may be discharged if you will use or manufacture one of the following compounds or if you know or have reason to believe that TCDD is or may be present In an effluent:

A. 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) (CAS # 93-765);
B. 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4, 5TP) (CAS # 93-72-1);
C. 2-(2,4,5-trichlorophenoxy) ethyl 2,2- dichloropropionate (Erbon) (CAS # 136-25-4);
D. 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) (CAS # 299-84-3);
E. 2,4,5-trichlorophenoI (TCP)(CAS # 95-95-4); or
F. Hexachlorophene (HCP) (CAS # 70-30-4).

Section 6-C

List any pollutants in Table 2D-3 that you believe will be present in any outfalls and briefly explain why you believe they will be present. No estimate of the pollutant's quantity is required, unless you already have quantitative data.

Note: Under 40 CFR 117.12(a)(2), certain discharges of hazardous substances (*listed in Table 2D-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 ADPES 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 DEC for further information on exclusions from section 311.

Section 7 – Engineering Report of Wastewater Treatment

Section 7-A:

If an engineering study was conducted, check the box labeled “report available.” If no study was done, check the box labeled “no report.”

Section 7-B:

Report the name and location of any existing plant(s) which, to the best of your knowledge, resembles your planned operation with respect to items produced, production process, wastewater constituents, or wastewater treatment. No studies need be conducted to respond to this item. Only data which is already available need be submitted.

This information will be used to inform the permit writer of appropriate treatment methods and associated permit conditions and limits.

Section 8 – Other Information

A space is provided for additional information which you believe would be useful in setting permit limits, such as additional sampling. Any response here is optional.

Section 9 - Certification

Alaska Statute 46.03.790 provides for severe penalties for submitting false information on this application form. State regulations at 18 AAC 83.385 require this application to be signed as follows:

1. **For a corporation**, a responsible corporate officer shall sign the application; in this subsection, a responsible corporate officer means:

   (A) 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

   (B) the manager of one or more manufacturing, production, or operating facilities, if

      (i) the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental statutes and regulations;

      (ii) the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and

      (iii) authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. **For a partnership or sole proprietorship**, the general partner or the proprietor, respectively, shall sign the application; and

3. **For a municipality, state, federal, or other public agency**, either a principal executive officer or ranking elected official shall sign the application; in this subsection, a principal executive officer of an agency means

   (A) the chief executive officer of the agency; or

   (B) a senior executive officer having responsibility for the overall operations of a principal geographic unit or division of the agency.

Include the name and title of the person signing the form and the date of signing.

TABLE 2D-1 CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

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

CHEMICAL TREATMENT PROCESSES

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

BIOLOGICAL TREATMENT PROCESSES

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

OTHER PROCESSES

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

SLUDGE TREATMENT AND DISPOSAL PROCESSES

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

TABLE 2D-2 POLLUTANT/PARAMETER LIST

GROUP A

Biochemical Oxygen Demand (BOD)
Chemical Oxygen Demand (COD)
Total Organic Carbon (TOC)
Total Suspended Solids (TSS)
Flow
Ammonia (as N)
Temperature (winter)
Temperature (summer)
pH

GROUP B

Bromide
Total Residual Chlorine
Color
Fecal Coliform
Fluoride
Nitrate-Nitrite (as N)
Oil and Grease
Phosphorus (as P) Total
Radioactivity
(1) Alpha, Total
(2) Beta, Total
(3) Radium, Total
(4) Radium 226, Total
Sulfate (as $S0_4$)
Sulfide (as S)
Sulfite (as $S0_3$)
Surfactants
Aluminum, Total
Barium, Total
Boron, Total
Cobalt, Total
Iron, Total
Magnesium, Total
Molybdenum, Total
Manganese, Total
Tin, Total
Titanium, Total

Section 1

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

Section 2

2,3,7,8,Tetrachlorodibenzo-P-Dioxin

Section 3

GC/MS Fraction — Volatile Compounds

Acrolein
Benzene
Carbon Tetrachloride
Chlorodibramomethane
2-Chloroethylvinyl Ether
Dichlorobomomethane
1,2-Dichloroethane
1,2-Dichloropropane
Ethylbenzene
Methyl Chloride
1,1,2,2-Tetrachloroethane
Toluene
1,1,1-Trichloroethane
Trichloroethylene
Vinyl Chloride
Acrylonitrile
Bromoform
Chlorobenzene
Chloroethane
Chloroform
1,1-Dichloroethane
1,3-Dichloropropylene
Methyl Bromide
Methylene chloroethane
Tetrachloroethylene
1,2-Trans-Dichloroethylene
1,1,2-Trichloroethane

GS/MS Fraction — ACID Compounds

2-Chlorophenol
2,4-Dimethylphenol
2,4-Dinitro-phenol
4-Nitrophenol
Pentachlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
4,6-Dinitro-O-Cresol
2-Nitrophenol
P-Chloro-M-Cresol
Phenol

GC/MS Fraction — Base/Neutral Compounds

Acenaphthene
Anthracene
Benzo (a) Anthracene
3,5-Benzofluoranthene
Benzo (k) Fluoranthene
Bis (2-Chloroethyl) Ether Bis
Bis (2-Ethylhexyl) Phthalate
Butyl Benzyl Phthalate
4-Chlorophenyl Phenyl Ether
Dibenzo (a, h) Anthracene
1,3-Dichlorobenzene
3,3-Dichlorobenzidine
Dimethyl Phthalate
2,4-Dinitrotoluene
Di-N-Octyl Phthalate
Fluoranthene
Hexachlorobenzene
Hexachlorocyclopentadiene
Indeno (1,2,3-cd) Pyrene
Naphthalene
N-Nitro-sodimethylamine
N-Nitro-sodiphenylamine
Pyrene
Acenaphtylene
Benzidine
Benzo (a) Pyrene
Benzo (ghi) Perylene
Bis (2 Chloroethoxy) Methane
(2-Chloroisopropyl) Ether
4-Bromophenyl Phenyl Ether
2-Chloronaphthalene
Chrysene
1,2-Dichlorobenzene
1,4-Dichlorobenzene
Diethyl Phthalate
Di-N-Butyl Phthalate
2,6-Dinitrotoluene
1,2, Diphenylhydrazine (as Azobenzen)
Fluorene
Hexachlorobutadiene
Hexachloroethane
lsophorone
Nitrobenzene
N-Nitrosodi-N-Propylamine
Phenanthrene
1,2,4-Trichlorobenzene

GC/MS Fraction — Pesticides

Aldrin
Alpha-BHC
Beta-BHC
4,4' DDT
4,4'-DDD
Alpha-Endosulfan
Endosulfan Sulfate
Endrin Aldehyde
Heptachlor Epoxide
PCB-1254
PCB-1232
PCB-1260
Toxaphene
Gamma-BHC
Delta-BHC
Chlordane
4,4' DDE
Dieldrin
Beta-Endosulfan
Endrin
Heptachlor
PCB-1242
PCB-1221
PCB-1248
PCB-1016

TABLE 2D-3 TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

TOXIC POLLUTANT

Asbestos

HAZARDOUS SUBSTANCES

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlorpyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D (2,4-Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2,2-Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethyl amine
Dintrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethion
Ethylene diamine
Ethylene dibromide
Formaldehyde
Furfural
Guthion

HAZARDOUS SUBSTANCES

Isoprene
Isopropanolamine dodecylbenzenesulfonate
Kelthane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Methyl parathion
Mevinphos
Mexacarbate
Monoethyl amine
Monomethyl amine
Naled
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfonate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Styrene
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
TDE (Tetrachlorodiphenylethane)
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Trichlorofon
Triethanolamine Dodecylbenzenesulfonate
Triethylamine
Trimethylamine
Uranium
Vanadium
Vinyl acetate
Xylene
Xylenol
Zirconium

TABLE 2D-4 HAZARDOUS SUBSTANCES

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

180. Mercuric thiocyanate
181. Mercurous nitrate
182. Methoxychlor
183. Methyl mercaptan
184. Methyl methacrylate
185. Methyl parathion
186. Mevinphos
187. Mexacarbate
188. Monoethylamine
189. Monomethylamine
190. Naled
191. Naphthalene
192. Naphthenic acid
193. Nickel ammonium sulfate
194. Nickel chloride
195. Nickel hydroxide
196. Nickel nitrate
197. Nickel sulfate
198. Nitric acid
199. Nitrobenzene
200. Nitrogen dioxide
201. Nitrophenol
202. Nitrotoluene
203. Paraformaldehyde
204. Parathion
205. Pentachlorophenol
206. Phenol
207. Phosgene
208. Phosphoric acid
209. Phosphorus
210. Phosphorus oxychloride
211. Phosphorus pentasulfide
212. Phosphorus trichloride
213. Polychlorinated biphenyls (PCB)
214. Potassium arsenate
215. Potassium arsenite
216. Potassium bichromate
217. Potassium chromate
218. Potassium cyanide
219. Potassium hydroxide
220. Potassium permanganate
221. Propargite
222. Propionic acid
223. Propionic anhydride
224. Propylene oxide
225. Pyrethrins
226. Quinoline
227. Resorcinol
228. Selenium oxide
229. Silver nitrate
230. Sodium
231. Sodium arsenate
232. Sodium arsenite
233. Sodium bichromate
234. Sodium bifluoride
235. Sodium bisulfite
236. Sodium chromate
237. Sodium cyanide
238. Sodium dodecylbenzenesulfonate
239. Sodium fluoride
240. Sodium hydrosulfide
241. Sodium hydroxide
242. Sodium hypochlorite
243. Sodium methylate
244. Sodium nitrite
245. Sodium phosphate (dibasic)
246. Sodium phosphate (tribasic)
247. Sodium selenite
248. Strontium chromate
249. Strychnine
250. Styrene
251. Sulfuric acid
252. Sulfur monochloride
253. 2,4,5-T acid (2,4,5-Trichlorophenoxyacetic acid)
254. 2,4,5-T amines (2,4,5-Trichlorophenoxy acetic acid amines)
255. 2,4,5-T esters (2,4,5 Trichlorophenoxy acetic acid esters)
256. 2,4,5-T salts (2,4,5-Trichlorophenoxy acetic acid salts)
257. 2,4,5-TP acid (2,4,5-Trichlorophenoxy propanoic acid)
258. 2,4,5-TP acid esters (2,4,5-Trichlorophenoxy propanoic acid esters)
259. TDE (Tetrachlorodiphenyl ethane)
260. Tetraethyl lead
261. Tetraethyl pyrophosphate
262. Thallium sulfate
263. Toluene
264. Toxaphene
265. Trichlorofon
266. Trichloroethylene
267. Trichlorophenol
268. Triethanolamine dodecylbenzenesulfonate
269. Triethylamine
270. Trimethylamine
271. Uranyl acetate
272. Uranyl nitrate
273. Vanadium pentoxide
274. Vanadyl sulfate
275. Vinyl acetate
276. Vinylidene chloride
277. Xylene
278. Xylenol
279. Zinc acetate
280. Zinc ammonium chloride
281. Zinc borate
282. Zinc bromide
283. Zinc carbonate
284. Zinc chloride
285. Zinc cyanide
286. Zinc fluoride
287. Zinc formate
288. Zinc hydrosulfite
289. Zinc nitrate
290. Zinc phenolsulfonate
291. Zinc phosphide
292. Zinc silicofluoride
293. Zinc sulfate
294. Zirconium nitrate
295. Zirconium potassium flouride
296. Zirconium sulfate
297. Zirconium tetrachloride

FIGURE 2D-1 LINE DRAWING